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Missouri Medicine

Journal of the Missouri State Medical Association January 1993

Joseph Orr
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In this Issue:

☐ *I still believe in a place called Hope*

☐ *Installment one of a new series: Chronic Disease Reports*

☐ *A salute to physicians from the Kansas City School of Medicine*

☐ *Alpha-1-antitrypsin Deficiency: A rare cause of adult cirrhosis*

☐ *Hepatitis C testing: interpretation, implications, and counseling*

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MISSOURI STATE MEDICAL ASSOCIATION
Box 1028
113 Madison Street
Jefferson City, Missouri 65102
Phone: 314/636-5151
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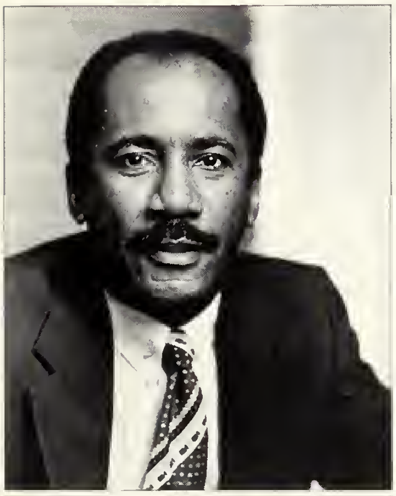
I Still Believe In A Place Called Hope

by Robert Lee, PhD, Assistant Dean, Minority Student Affairs
Washington University School of Medicine, St. Louis, Missouri



Robert Lee, PhD

In a matter of days, this nation will inaugurate its forty second president, William Jefferson Clinton, a.k.a. Bill Clinton. It is said to be a time of a new beginning! It is said to be a time when we as Americans will come together to work on the many pressing issues of the day. Throughout his campaign, a familiar refrain was heard, even in his first bus tour stop in St. Louis following his party's national convention. He said to all who would hear, "I Still Believe In a Place Called Hope." For better or worse, depending on which side of the political aisle you sit, we are gaining a new president. Looking back twenty-five years ago in 1968, this nation lost a man to an assassin's bullet for that very message of hope instead of despair, peace instead of war, justice instead of injustice, and equality instead of inequality. Dr. Martin Luther King Jr., heralded as a drum major for peace, in losing his life, became a martyr, achieving through his death a powerful force for change and a telling indictment of neglect and hatred towards many of America's citizens. His violent death also brought home the realization that educational opportunities so freely enjoyed by many of America's sons and daughters, were blatantly denied to black Americans and other citizens of color. The educational entitlements were far in arrears and payment-on-demand had come due. Along the educational continuum, educators, administrators, civic leaders, politicians and other persons of goodwill undertook the task of examining how far in arrears we were and made recommendations for change.

In 1968, the Association of American Medical Colleges (**AAMC**) was one of the entities involved in this self-examination. Prior to this time, black students historically had only limited access to medical education; being primarily trained at two predominantly black medical schools, Howard University College of Medicine in Washington, D.C., and Meharry Medical College in Nashville, Tennessee. It was reported by a leading medical educator that of the two hundred and eighty-five black students enrolled in United States medical schools in the fall of 1968, one hundred and fifty-five of them matriculated at Howard and Meharry Medical Colleges. This figure represented 54% of the entering black students who attended medical school in the United States that year. Anne E. Crowley and Hayden C. Nicholson, writing for a 1968 edition of the *Journal of the American Medical Association* in an article entitled "Negro Enrollment in Medical School," stated, "even though more than 11% of the nation's population is Negro, less than 2% of American physicians are black. Or, to put it another way, among white citizens, one American in 560 becomes a doctor; among Negroes, it is one of 3,800." You can tell by how African-Americans were referred to in the

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From the Editor:

Throughout the year I have presented guest editorials to highlight various components of medical education and training in Missouri. A growing awareness and an enhanced sensitivity toward the needs of minority members of our communities has had an impact on education at the medical school level. Appropriate representation by minority citizens in the medical profession, and in particular in the medical school environment, requires a vision incorporating a long-term continuum of steps to ensure opportunity and academic success. This is referred to as the "academic pipeline" by our guest author.

Dr. Robert Lee brings a unique and experienced perspective to this discussion. I appreciate Dr. Lee's contribution to this issue of *Missouri Medicine*. His insight and tenacity has significantly benefitted the opportunities of many minority students through his years of service.

J. Regan Thomas, MD, Editor

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article that it is somewhat dated. Unfortunately, though there has been some change in the figures, medical education for this population has yet to reach population parity. Since 1968, however, U.S. medical schools have actively recruited, admitted, educated and are now graduating an increased number of minority student (doctors). In a policy statement by the Executive Council of the **AAMC**, on medical education of minority group students, the following statement was adopted on December 16, 1970:

> The **AAMC** and its constituent members are directing earnest attention and effort toward the goal of increasing minority opportunities in medical service, teaching, and research. Medical schools, working with cooperating pre-professional colleges, are urged to help increase minority student awareness of the opportunities for professional education and the specific preparation necessary for medical school. Minority students, thus motivated, prepared, and recruited should be provided encouragement to complete their course of study.

This was a major step towards a full-scale national program to bring diversity to the medical profession through the training of black, hispanic, Native American and Mainland Puerto Rican students to become physicians. **"Project 75,"** an ambitious effort to bring population parity (12%) for black medical students enrolled in the 127 U.S. medical schools was never reached for a number of reasons. **"Project 3000 by 2000"** is a current campaign (circa 1991) to increase the enrollment of underrepresented minority students in U.S. medical schools which now totals 126. **"Project 3000 by 2000"** is a campaign of the Association of American Medical Colleges which takes its name from its goal to increase the annual matriculation of minorities in U.S. medical schools to 3,000 by the Year 2000, an approximate doubling over current numbers. In order to do this, medical schools must begin to view the academic pipeline from the beginning of high school to the end of medical school as a twelve year continuum during which the academic ability and the desire to become a physician can either be increased or dissipated. Increasing the enrollment of underrepresented minority students requires broad-based institutional commitment, not unlike that required for other major institutional objectives at the medical school, such as increasing faculty research productivity. Making such commitments requires planning, including a strategic analysis of institutional strengths and weaknesses.

At Washington University School of Medicine, programs have been in place since 1981 to achieve such a goal; to develop a "pipeline" strategy for minority student recruitment. The following programs are currently funded, have been funded or efforts are being taken to secure funding:

- Minority High School Student Research Apprentice Program
- Minority High School Teachers Research Apprentice Program
- Minority High School Fellows Research Apprentice Program
- St. Louis Public Schools' Partnership Program
- Minority Saturday Scholars' Program
- Young Scientists Program
- Minority Programs for Advancement & Training in Health Sciences, I & II *(M-PATHS)*
- Minority Prematriculation Program
- Distinguished African-American Students Scholarship Programs

There is much to do and miles to go before we sleep, and miles to go before we sleep. But, like President-Elect Clinton and Dr. King before him, I still believe in a place called hope. Hope that comes from the honest and sincere efforts of people of goodwill; hope that comes from the hard work and sincerity of bright, young and supple minds that surmount obstacles in quest of promise; hope that invigorates me when I encounter dedication to dreams fortified with tenacity and hope that comes on the promise of better tomorrows. For twenty years now, I have been privileged to be a part of the metamorphosis of youth moving from civilian to professional, from timidity to appropriate confidence and understanding of their privilege to be entrusted with the responsibility to serve. When asked by many whose lives we have touched, how can their debt be paid, my constant reply to them is to reach back and touch the lives around and behind them. Now I can add, **"help others to also believe in a place called hope!"**

Editor's Note: Dr. Lee is a native of St. Louis, Missouri. He received his undergraduate degree in elementary education from Harris Teachers College in 1966, now Harris Stowe State College, his M.Ed. from the University of Missouri-St. Louis in counseling and his PhD from Saint Louis University in counseling psychology. He is a licensed psychologist in the state of Missouri and has served as assistant dean for minority student affairs at Washington University School of Medicine since 1972. He is married to Beverly H. Lee, an attorney. They are the parents of two sons, Jason & Evan Lee.

The request for Tylenol

by
Carol Williams, MD
President, Missouri State Medical Association

Early in the third trimester of her pregnancy, she called her obstetrician about a headache she had had for two weeks. Calling a little after midnight, she wanted to know whether or not it was all right for her to take Tylenol. No, the pain was no worst tonight than it had been previously; she just wanted to know if it was all right to take Tylenol. Irritated at the lateness of the call and the neglected symptomatology, the obstetrician was about to deliver a lecture on Tylenol in pregnancy, but at the insistence of the delivery room nurse she began probing the woman's relationship with her husband instead. What emerged was a picture of a man who worked the late shift, who stopped off for a few beers with his buddies, and who then came home and beat his wife. The woman developed insomnia and headaches in anticipation of these late-night assaults. The woman's call to the obstetrician was her cry for help.

Domestic violence is epidemic in our society. It knows no boundaries; it affects the affluent as well as the poor, the professional as well as the blue-collar worker and the manual laborer, the elderly as well as the child. Those who are the victims of family violence are often silent about the abuse out of fear of reprisal and shame about their helplessness to break the vicious cycle. When they do seek help, they most often turn to the physician, who may not recognize the cry for help beneath the request for Tylenol or may end the encounter with, "I don't understand why an intelligent woman like you doesn't divorce the jerk".

Beginning in 1985, when the American College of Obstetricians and Gynecologists called attention to the problem of spouse abuse and published a technical bulletin on "The Battered Woman", several specialty societies have focused publications and programs on aspects of violence in the family. The American College of Emergency Physicians featured an article on "The Role of the Emergency Physician in the Prevention of Domestic Violence" in the 1987 *Annals of Emergency Medicine.* The American Academy of Pediatrics has a brochure for parents on "Child Sexual Abuse: What it is and how to prevent it" and is preparing a slide/audio cassette presentation on child abuse and neglect for the use of health care professionals. The American Academy of Family Physicians called attention to domestic violence in the Fall, 1991, issue of *Good Health,* a patient newsletter distributed to the members of the Academy.

Early in 1992, the AMA launched a comprehensive campaign to combat violence in families. *JAMA* published a series of articles on the topic. The Auxiliary/Alliance developed a series of brochures on the identification and treatment of victims of domestic violence and has taken on the job of educating the medical community and the public about this issue. Through its component societies the Auxiliary/Alliance is involved in community efforts to provide assistance and support to victims of domestic violence.

The goals of the campaign are

1) to increase the awareness of physicians and other health care professionals to domestic violence by increasing their recognition of the symptoms and by developing appropriate questions to ask its victims.

2) to familiarize the health care professional with state laws about violence in families and increase the readiness of such professionals to testify in court about the medical condition of their patients.

3) to make the health care professional aware of community resources available to the victims of family violence.

4) to encourage health care professionals to become involved in the development of protective and supportive services for victims in educating the public about domestic violence.

As the professional most often consulted by the victims of family violence, the physician is a key player in the drive to curb violence in the home. The AMA has formed the national Coalition of Physicians Against Family Violence. It costs nothing to join the Coalition except the commitment and determination to put an end to the carnage in our homes and to make them the havens they should be. ■

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Dear Dr. Woerth,

I am a family practitioner and am frequently called in by a surgeon during the post-operative period of a Medicare patient to manage the patient's diabetes, blood pressure, or some similar problem. In most cases, I am the family physician of the patient. What type of service should I be charging the patient?

Dr. B. F.

Dear Dr. B. F.,

If the patient is one you treated previously, the correct service to bill is a subsequent hospital visit when treatment is provided in the hospital or an established patient office visit when the treatment is provided in your medical office. Be sure that you list the diagnosis that you are treating the patient for as the primary diagnosis on your claim form. This will alert the insurance company that you and the surgeon are rendering concurrent care. (The surgeon should be using the surgery diagnosis as the primary diagnosis on his/her claims form.)

If you are called in to treat a patient for the first time, you should charge for the first service as either an initial hospital consultation or an initial office consultation depending on where the service is rendered. Follow-up visits after the initial consultation are billed as subsequent hospital visits or as established patient office visits.

Dear Dr. Woerth,

I have heard that we will soon be required to send our claims electronically to Medicare. Is there any truth to this rumor?

Dr. B. V.

Dear Dr. B. V.,

There have certainly been a great deal of effort made by HCFA to encourage physicians to use electronic claims. As of October 1, 1992 physicians who file their Medicare claims electronically received payment as many as 13 days sooner then physicians who file paper claims. Also on November 20, 1992 physicians using electronic claims could have their Medicare payments deposited via electronic funds transfer into their bank accounts. To qualify for electronic funds transfer, a physician must file at least 90% of his/her claims electronically.

In 1992, 51% of Medicare Part B claims were submitted electronically. HCFA's goal is to have 75% of these claims submitted electronically in 1993.

Will HCFA require physicians to submit claims electronically in the future? Probably not. But they might and they have discussed implementing a fee to process paper claims. The most discussed fee is a $1 per claim charge and, of course, this fee would not be billable to the patient. I believe with the financial benefits of billing claims electronically, and with the possibility of imposing fees to process paper claims, it will not be necessary for HCFA to require physicians to submit claims electronically.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, PhD
Practice Management
c/o *Missouri Medicine*
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
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Although your name will not be used in *Missouri Medicine*, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

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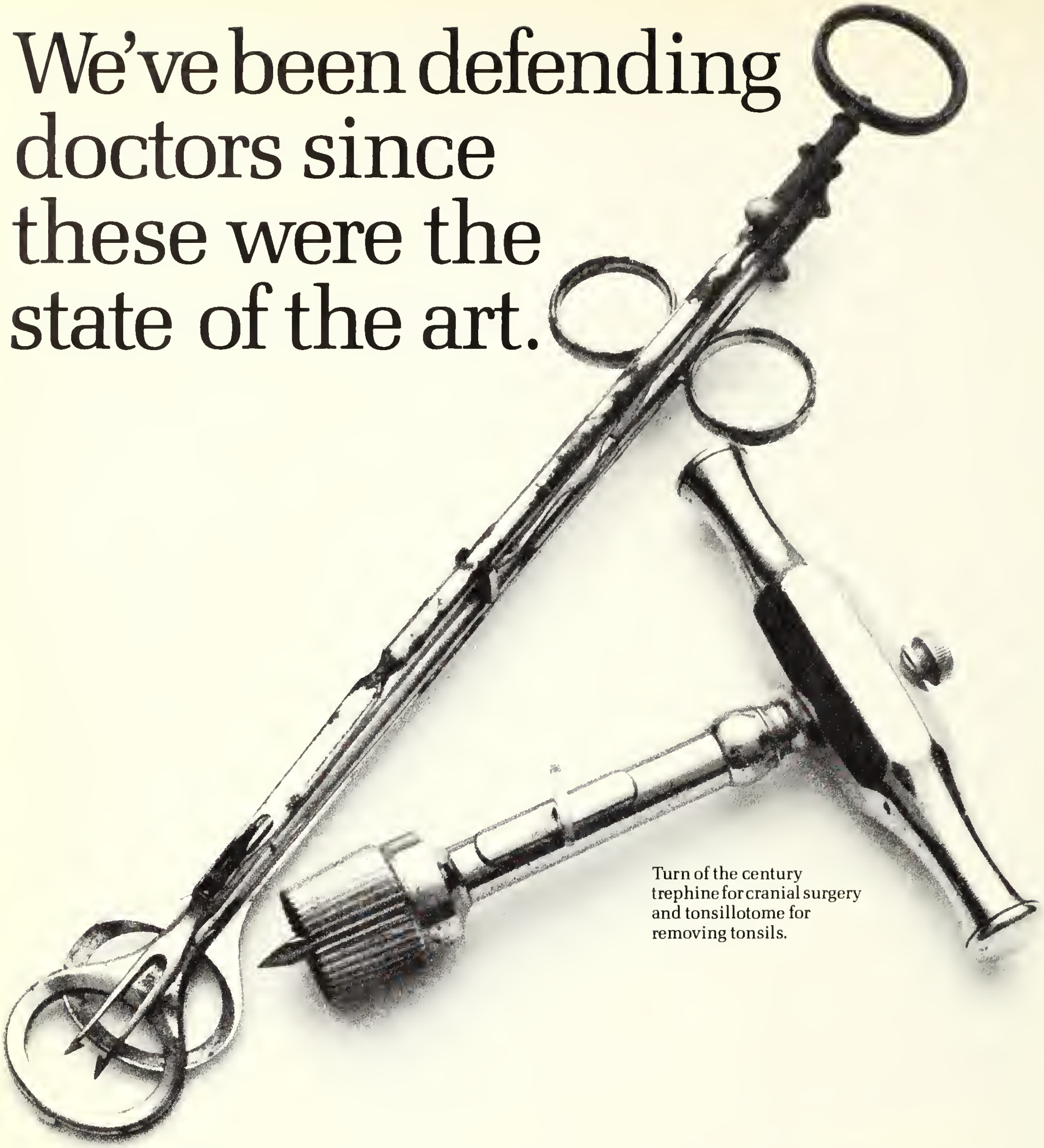

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Collection Problems

If you have a contract to provide services as a participating physician, consider contacting your provider representative when you are experiencing difficulty in collecting either the deductible or the co-payment from their members. Along with a letter to the provider representative describing your efforts to collect, send a list of all those who participate in their plan and have not paid. CIGNA Healthplan of Kansas City sent such a letter to one of its members, in response to a physician's request. It instructed the member that failure to pay the co-payment could jeopardize future coverage under CIGNA's plan.

Occasionally the insurer will pay the patient instead of the physician. If you are a participating provider, contact the insurance company and ask them to pay you directly. You are not responsible for collecting from the patient who was paid in error. Your participation contract states that as a participating provider you will be paid directly.

Medicare Payment Update

HCFA has released the last piece of data required for calculation of the 1993 conversion factor (CF), the Medicare Economic Index (MEI). The new MEI is set at 2.7% - this will cause the nonsurgical CF to be increased by .8% to $31.25. This is equal to the MEI reduced by the amount (1.9%) actual nonsurgical services exceeded their volume performance standard. The surgical CF will increase by 3.1% to $31.96 because surgical services were less than their standard by .4%.

These numbers may change in early 1993 if Congress passes a bill reinstating payment for EKG interpretations and eliminating new physician discounts. Originally EKG's were added on to the relevant RVU total, so if payment is restored it may be done by removing the EKG's from the RVU's instead of changing the CF.

Due to the changes in the relative value units of many CPT codes and the blending of the amounts in transition to the Medicare Fee Schedule (MFS), there will be few payments which change by exactly .8% or 3.1%. Medicare's Dear Doctor letters will identify those procedures which are being paid at the MFS, more than last year, and less than last year.

The Medicare Part B participation agreement must be returned only if you are changing your status from nonparticipating to participating. If you are currently participating and want to continue, no action is required. If you are currently nonparticipating and want to continue not participating, no action is required. If you are currently participating and want to become nonparticipating, then you must write to all Medicare carriers with whom you have a participation agreement informing them of your decision to terminate your participation agreement. Any change of status notice to the carrier must be postmarked by December 31, 1992.

Last year's participation agreement allowed for payment in 17 days in addition to 100% of MFS as payment. This year's participation agreement will not allow for accelerated payment based on participation status because of the new rules for payment of EMC in 14 days and paper claims in 27 days. Direct deposit of payments is now available for providers filing at least 90% of their Medicare claims electronically.

Medicare E/M Code Usage

Evaluation and Management code service distribution reports for the second quarter of 1992 were reviewed by General American Medicare Part B. Important findings are listed as follows:

- ☛ The new visit code indices by class again reveal that General American Medicare providers were well within national averages in all E/M categories.
- ☛ For all physician specialties as a whole, providers generally had a higher distribution of allowed service in the less complex codes. The percentage in the more complex codes was always lower than the national average.
- ☛ General American is concerned with the usage of the following codes by specialty:

  - ✍ Ophthalmology 99245 - requires a complete system review and past history.
  - ✍ Psychiatry 99204, 99205, 99233 - requires com plete or extended system review and past history.

Continued on page 14

Note: Medical Economics is prepared by Patrick J. Mills, MBA, CPA. Mr. Mills is the Director of Health Care Finance for MSMA. These reports relate to changes in government regulations, insurance coverage, and other topics that may directly or indirectly impact upon a physician's economic situation. These reports are topical. They are the result of research performed to help solve an MSMA member's medical economics complaint, question or an attempt to demystify a ruling or regulation for a member. When appropriate, Mr. Mills may recommend a specific course of action that may help members avoid difficulties or to take advantage of emerging situations.

continued from page 13

- Radiology 99215, 99244, 99245 - requires complete system review, past history and fairly extensive physical examination.
- Thoracic Surgery 99255 - requires complete system review and a past history.
- Urology 99223, 99255 - requires complete system review and a past history.

Medicare Advisory Committee

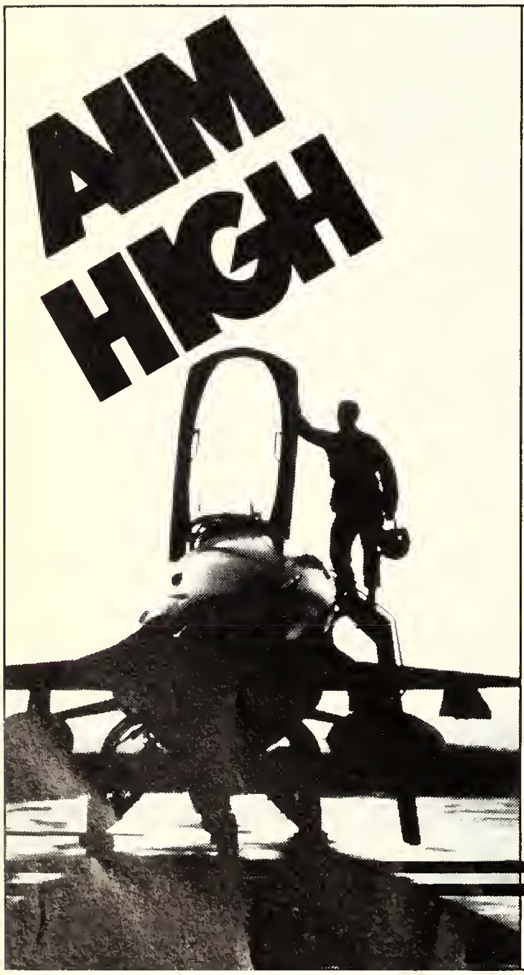
Both Medicare Part B carriers for Missouri have established advisory committees. The functions of the committee follow:

1. To provide a formal mechanism for committee members to be informed of and participate in the development of local medical review policies - in an advisory capacity.
2. To provide a forum for information exchange between the carrier and the membership with respect to new programs, directives, and policies.
3. To provide a mechanism for committee members to identify areas which need improvement in the administration of the Medicare program and achieve resolution of problems.

HCFA has recommended that each member take information on this committee's activities back to their society, specialty or subspecialty organizations. It is suggested that each group with a representative develop their own advisory committee to discuss proposed Medical Review Policies and to collect items of concern that could appear on future agendas.

General American had its first meeting on October 9 in St. Louis. The next meeting was on December 11 also in St. Louis. Blue Cross and Blue Shield of Kansas had its first meeting on December 2. Future meetings will be quarterly.

■



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AIR FORCE

Don't Be Left Out! Become a Member-At-Large

by Judy Corry, *MSMAA Members-At-Large Chairman*

During this trying time while our nation and our state are searching for ways to insure more equal access to our excellent health care delivery system, while achieving improved cost containment, it is more important than ever for members of the medical profession and their families to become active in our national, state and local political systems. One of the easiest ways to do this is to be sure all eligible voters are registered and remember to vote in all elections, not just the national level election. Taking the time and effort to be informed about legislation being considered and to express ideas, information and opinions to the legislators is crucial to our enacting laws and policies which take into account the experiences of medical people who care about the health care available to their patients.

Being a Member-At-Large (MAL) of the MSMAA is a way of participating in the state and national organizations even though you may live in a community without an organized county group to join. MALs receive information which helps keep them up-to-date on the progress of bills introduced into the legislative process and on other current health-related issues. These state and national organizations are also excellent sources of information about projects with potential for impact on the medical field and the health care of everyone in the MAL's home communities.

The privileges of membership also allow any MAL to assume delegate status at the state annual meetings and eligibility to serve on committees or as an officer if desired. The MAL special members are welcome at all state meetings, such as the annual Fall Conference and seminars and workshops offered from time to time. These meetings offer a chance to visit with other Auxiliary members from around the state and Auxiliary members from other state associations as well. Common concerns and issues are discussed and many times new perceptions and approaches can develop to help form shared ideas with other communities.

In recent years, several county auxiliary societies have been unable to maintain their organizations because of the small number of people participating. Any physician's spouse who would like to be involved in activities and have access to information about critical health care delivery and reimbursement information is welcome to join MSMAA as a Member-At-Large.

The MSMAA is committed to helping spouses of physicians learn ways to be supportive of each other and to encourage community-wide health care projects necessary to improve the health of all citizens in the region. Please consider carefully the advantages of becoming a Member-At-Large. You will have an opportunity to advance organized medicine and to represent your community's interests and concerns.

Please contact:
Judy Corry, MAL Membership Chair
417/881-7409 or write
2859 E. Utica,
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Please include me in this year's MSMAA and AMAA Activities.

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Mail to Judy Corry at address above.

Turn the page for additional MSMA Auxiliary information

Why Support Medical Education Through AMA-ERF?

by Joan D'Houbler, *MSMAA Vice President - AMA-ERF*

Have you ever asked, "Why should I contribute to my alma mater through AMA-ERF?" This article can answer your question.

Making sure the nation's future physicians receive the training they need to maintain the best health care in the world is the first priority for U.S. medical schools. Running a close second is finding ways to finance that training as spiraling costs and shrinking dollars combine to make needed sources of funding scarce.

Helping medical schools achieve those goals is the purpose of the American Medical Association Education and Research Foundation, which has distributed more than $57 million to the nation's medical schools in the past 40 years. A major factor in the success of AMA-ERF has been the involvement of national, state, and county auxiliary members, who now raise more than $2 million each year by urging physicians and spouses to choose AMA-ERF as their vehicle for supporting medical education. The following are several good reasons why you should be among them.

First, giving through AMA-ERF maximizes individual contributions. Your gift of $25, $50, or $100, when combined with the same amount from 10, 20, 30 or more donors, means that the medical schools receive a sizeable amount of money that can make a real difference to their programs.

Second, giving through AMA-ERF offers you the option of designating which school will receive your tax deductible contributions - your alma mater, the local medical school, or one attended by a family member.

Third, giving through AMA-ERF provides the option of designating which fund your contributions will benefit. The Medical School Excellence Fund allows schools to use the money where it is most needed. The Medical Student Assistance Fund enables medical schools to provide financial aid to students though scholarships, grants, and loans. A gift to the Development Fund is used at the discretion of the AMA-ERF Board of Directors to support a research, experimental health, or medical program; while the Categorical Research Grant Fund supports research in a specific field.

Fourth, giving through AMA-ERF insures accountability. You know how your money is being used by the medical school since auxiliary leaders are in contact with the deans and can share this information with you.

Your contributions to AMA-ERF are held during the calendar year and distributed the following March to the state medical societies for presentation to the medical schools. The interest earned during that time is used to pay administrative costs. This enables the foundation to forward 100% of your contribution to the designated medical school.

A few contributions, however, are not held until the end of the year. There are contributions which receive "special handling," which means they are forwarded to the designated school within four to six weeks of receipt. Contributions are automatically special handled when the contribution has a specific designation (e.g., for a library fund, class gift, etc.), or is $500 or more. Contributions of less than $500 may be special handled upon request.

Each medical school receives a list of its AMA-ERF contributors every month.

We are committed to further the excellence of education and research in our nation's medical schools. The challenge to support the future of medicine in America is real. Federal moneys ear-marked for student loans are being manipulated to achieve political goals, i.e. reward the students who elect primary care. As a result, students who decide to specialize in a "politically incorrect" area of medicine will be burdened with even larger educational debts.

Please consider supporting the medical school of your choice by contributing through AMA-ERF. While your contributions can be designated to a medical school in any state, your Missouri State Medical Auxiliary is also credited with your contributions. To make this possible please complete the convenient form below.

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Trends and projections in selected chronic disease risk factors in Missouri, 1986 - 2000

By

Ross C. Brownson, PhD, Joan C. Wilkerson, BA, Jeannette Jackson -Thompson, PhD, MSPH, James R. Davis, PhD, Donald J. Sharp, MD, and Karen M. Northup, MSN, MPH

During this century, there has been an immense shift in the causes of death and disability. In 1900, the major causes of death were infectious diseases such as pneumonia, tuberculosis, and diarrhea. In contrast, in 1991, 71.5% of all deaths in Missouri were caused by four major chronic diseases: cardiovascular disease (i.e., heart disease and stroke), cancer, chronic lung disease, and diabetes.[1]

Most chronic diseases are characterized by a complex interaction of risk factors, a non-contagious origin, a long latent period between risk factor exposure and clinical occurrence of disease, and a long period of illness.[2]

Through advances in medical and epidemiological research, we now know that much of the death and disability due to chronic diseases is preventable. For example, the U.S. Surgeon General has estimated that as many as half of all deaths may be related to life-style behaviors such as poor diet, smoking, or physical inactivity,[3] and are therefore preventable.

In this article, we report on trends over time for three chronic disease risk factors: cigarette smoking, physical inactivity, and lack of cholesterol screening. We used the Behavioral Risk Factor Surveillance System (BRFSS) to examine these three risk factors which are among a group of factors targeted as priorities for the year 2000 at both state[4] and national[5] levels.

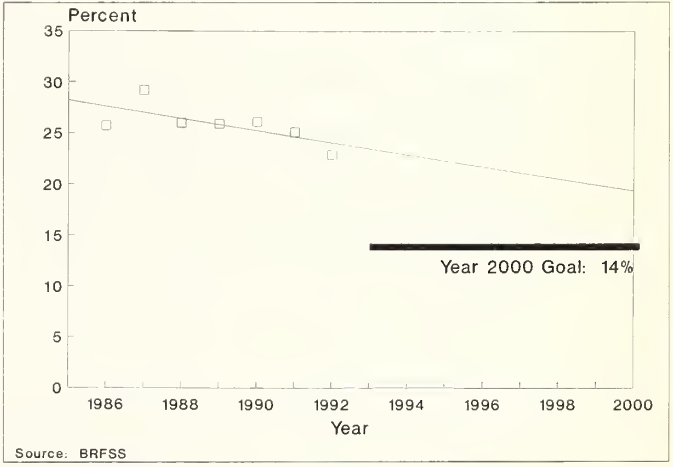
Methods

The BRFSS was developed by the Centers for Disease Control to assist state health departments in the measurement of modifiable risk factors. These risk factors include cigarette smoking, physical inactivity, obesity, hypertension, mammography utilization, and others.[6,7] Data on various behavioral risk factors are necessary to formulate and evaluate interventions, develop policy initiatives, and monitor the population's health behaviors over time.

The BRFSS uses a random digit dialing technique[8] to select adult Missourians (>18 years of age) for telephone interviews. The interviews are conducted monthly. Since Missouri began participation in the BRFSS, the yearly sample sizes have ranged from 882 in 1986 to 1,512 in 1991.

To examine trends in three important chronic disease risk factors (i.e., cigarette smoking, physical inactivity, and never having cholesterol checked - See Supplementary Information on page 20 for definitions), we analyzed BRFSS data collected between January 1986 and June 1992. We chose these three variables for analysis because they are generally reported accurately in BRFSS-type surveys[9,10] and have been targeted as public health priorities.[4,5] Questions on cholesterol screening were not included in the 1986 survey, so results on cholesterol are presented for 1987 through 1992.

Data were analyzed using the programs of SAS[11,12] and SUDAAN.[13] A least-squares linear regression model



Source: BRFSS

Figure 1. Prevalence (%) of current cigarette smoking among Missouri adults (1986-92), with projections to the year 2000.

PHYSICIAN INTERVENTION CAN MAKE A DIFFERENCE

Dan Vinson, MD, a family practice physician in Columbia, reported that a 55-year-old female patient became defensive and angry when asked if she was interested in stopping her long-standing smoking habit. She said she was not interested in any information on smoking cessation techniques. However, when she returned two weeks later for an unrelated problem, she very happily related that she had stopped smoking mainly because of the attention placed on smoking at the previous visit.

Robin Blake, MD, a family practice physician also in Columbia, related the history of an obese, 39-year-old male patient with a family history of hypercholesterolemia and symptoms of chronic fatigue and shortness of breath. Initially the patient was resistant to diet, exercise, and cholesterol counseling, but eventually agreed to have his cholesterol level checked. After the results were obtained (275 mg/dL) and after further counseling, the patient agreed to a program of daily morning walks and a low-fat, low-cholesterol diet.

Within eight months the patient lost 50 pounds, his cholesterol level dropped to approximately 210 mg/dl, and he reported a much improved self-image as well. The patient continued under the care of Dr. Blake for the next several years and maintained this weight reduction.

was used to project trends in risk factors.[11,12] In addition, a chi-square test for linear trend[14,15] was used to determine whether changes in risk factors over time were statistically significant.

Results

Figure 1 illustrates the trend over time for smoking, including a projection to the year 2000. Smoking rates varied from a high of 29.2% for 1987, to a low of 22.9% for the first half of 1992. The mean smoking rate over the 7-year period was 25.8%. A chi-square test for linear trend indicated a non-significant decline during the period (p = 0.24). If the current rate of decline continues, Missouri will achieve a smoking rate of approximately 19% by the year 2000. The year 2000 goal for Missouri is to reduce smoking to <14%.[4]

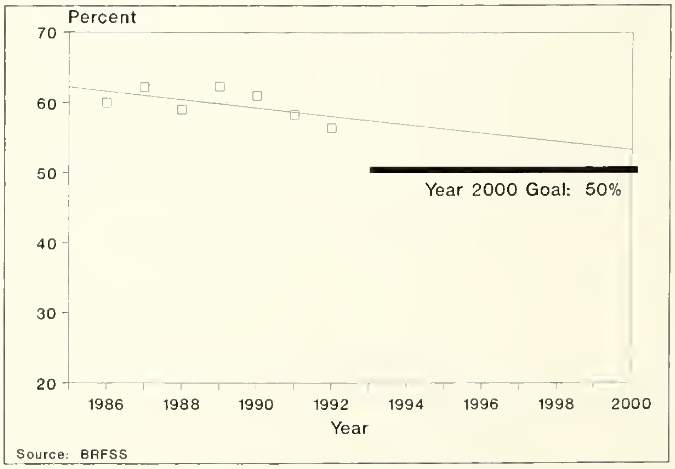
Figure 2 shows that the majority of adult Missourians are physically inactive (i.e., engage in fewer than three 20-minute sessions of leisure-time physical activity per week). The highest rate of physical inactivity was 62.3% in 1989 and the lowest was 56.4% in 1992; the mean prevalence was 59.9%. As with cigarette smoking, a non-significant decline in the prevalence of physical inactivity was observed (p = 0.26). If current trends continue, a physical inactivity rate of approximately 53% will be achieved by the year 2000. The state year 2000 goal for physical inactivity is 50%.[4]

A decline over time was observed in the frequency of individuals who had not undergone cholesterol screening (Figure 3). In 1987, 49.2% had not undergone cholesterol screening, compared with 30.8% in 1992. This decline over time was significant at p = 0.001. Among respondents who had undergone cholesterol screening, 98% had their cholesterol checked within the past five years. If the current rate of decrease continues, Missouri will achieve its year 2000 goal[4] for cholesterol screening, which is 5%.

Discussion

Our examination of selected chronic disease risk factors over time raises several important issues. Although progress was shown for each of the risk factors examined, based on current projections, year 2000 goals for cigarette smoking and physical inactivity are unlikely to be met. For cholesterol screening, the year 2000 goal has a better chance of being achieved.

Our findings are similar to national data[16,17] and to a recent study from Utah[18] that found a significantly in-



Source: BRFSS

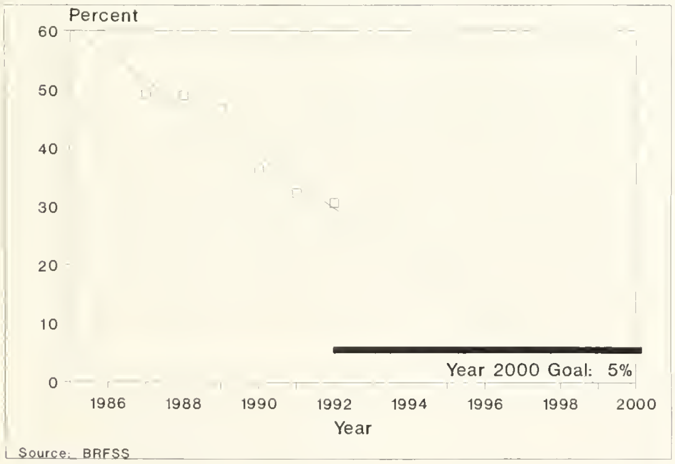
Figure 2. Prevalence (%) of physical inactivity among Missouri adults (1986-92), with projections to the year 2000

creasing trend in cholesterol screening and non-significant decreases in the prevalence of smoking and physical inactivity.

While the current study examined overall trends in risk factors, earlier reports have noted the higher prevalence of chronic disease risk factors among minority groups[19] and economically disadvantaged populations.[16] Public health interventions are underway to address excess mortality in these populations. These activities include developing community-based coalitions to reduce the risk of heart disease and stroke (e.g., by organizing programs that promote exercise, prevent smoking, and improve dietary practices).[20] Interventions are also underway to reduce smoking among high-risk populations through the American Stop Smoking Intervention Study (Project ASSIST).[21,22]

Physicians and other health-care professionals can play important roles in reducing the prevalence of chronic disease risk factors. Clinicians have excellent opportunities for brief interventions. These interventions should include: 1) asking all patients about risk behaviors such as smoking and physical inactivity; 2) advising those at risk to modify behavior; 3) assisting patients who want to make changes now; and 4) arranging follow-up visits. In the area of smoking cessation, detailed advice is available in *How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians* (can be obtained by calling the Cancer Information Service at 1-800-4-CANCER)[23]. The U.S. Preventive Services Task Force report: *Guide to Clinical Preventive Services*[24] includes excellent summary chapters on exercise and nutrition counseling.

Despite the cost-effectiveness of physician counseling for chronic disease risk reduction[25] and national recommendations[5], a recent study found that only 42% of Missouri smokers reported being advised to quit smoking and only 17% of sedentary individuals reported advice from physicians to exercise more frequently.[26] As the health-care system is modified and reformed in the next few years, a stronger emphasis on reimbursement for preventive services (e.g., counseling for smoking cessation) would encourage providers to increase activities in chronic disease risk reduction.



Source: BRFSS

Figure 3. Prevalence (%) of never having blood cholesterol checked among Missouri adults (1987-92), with projections to the year 2000.

Physicians can also play more active roles in reducing the burden of chronic diseases by participating in community-based coalitions[20] and by supporting policy initiatives such as the restrictions of tobacco sales to minors and restrictions on smoking in public places.[27]

With strong evidence linking cholesterol to coronary heart disease and studies demonstrating the benefit of cholesterol reduction, the National Cholesterol Education Program (NCEP) was launched in 1987. The purpose of the NCEP was to develop national health policy recommendations to reduce the risk of coronary heart disease by lowering cholesterol levels in the U.S. population.[28] The NCEP recommended that all adults have their blood cholesterol measured at least once every five years. Our data suggest that public health recommendations (e.g., NCEP guidelines) for cholesterol screening are being implemented in Missouri.

Our study is limited by the self-reported nature of the data collected through the BRFSS. Since BRFSS relies on telephone interviews, it under-represents some high-risk groups who may have limited phone coverage, and therefore underestimates risk factor prevalence.[7] Another limitation of our study relates to the cholesterol screening results. Although cholesterol testing is an important first step in decreasing the risk of cardiovascular disease, the current BRFSS sample had no way to assess how many of those with high cholesterol levels made other life-style changes (e.g., dietary changes) to reduce cholesterol levels.

Despite the favorable trends for certain chronic disease risk factors, concerted action will be necessary to achieve year 2000 health objectives for cigarette smoking and physical inactivity. Physicians can play a key role in achieving health objectives for the state and nation.

Acknowledgments

The authors are grateful to supervisors and surveyors from Manpower, Inc., who conducted data collection. They also thank Dr. Mark Van Tuinen and Ms. Nancy Hudson who managed the BRFSS between 1986 and 1989. This study was supported in part by Centers for Disease Control contract no. U58/CCU700950.

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Supplementary Information

*Definitions of risk factors used in BRFSS: smoking: respondents who have ever smoked 100 cigarettes and currently smoke cigarettes; physically inactive: respondents reported fewer than three 20-minute sessions of leisure-time physical activity per week; cholesterol not checked: respondent replied "no" when asked if they had ever had their blood cholesterol checked.

The Authors:
Ross C. Brownson, PhD
Joan C. Wilkerson, BA
Jeannette Jackson - Thompson, PhD, MSPH
James R. Davis, PhD
Donald J. Sharp, MD
Karen M. Northup, MSN, MPH

The authors are associated with the Missouri Department of Health. Dr. Sharp is associated also with the Centers for Disease Control and Prevention, Atlanta, Ga.

Reprint requests to
Dr. Brownson
Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, 201 Business Loop 70 West, Columbia, MO 65203; Tel. (314) 876-3200; FAX (314) 443-3592.

A Salute to Missouri's physicians for their contributions to the University of Missouri Kansas City School of Medicine

by Richardson D. Noback, MD, and James J. Mongan, MD

On the 18th of September, 1992, the University of Missouri Kansas City School of Medicine celebrated twenty-one years of operation and the graduation of 1,287 students. That celebration provided an opportunity to recognize the many contributions which Missouri physicians have made to the school.

The Academic Plan calls for an open and regional educational program which asks for, seeks, and welcomes the participation of physicians in all aspects of the life of the school from the selection of students, to the establishment of the curriculum, to the evaluation of student and faculty, and most importantly, to the establishment and demonstration of the high standards of medicine.

In 1962, Missouri physicians began to become involved seriously in the early efforts to establish a medical school when three years of work by community leaders resulted in a shared contract between the city, the Curators of the University of Missouri, and the new Kansas City General Hospital and Medical Center Corporation. That contract provided the base for the development over the last thirty years on Hospital Hill.

Between 1962 and the authorization of the school in 1969, Missouri physicians contributed in many ways to examinations of the need for the school, the purposes appropriate for a new school, and how best to implement the school. The Council and the House of Delegates of the Missouri State Medical Association as well as the Jackson County Medical Society all took part in the review and testing of ideas. Many physicians contributed directly to the base for the new school by their roles as volunteer or full-time members of the University of Missouri Mental Health Center, and the Kansas City General Hospital.

During this period, several gifts were particularly important. In 1977, the Jackson Society Medical Society gave its large and valuable library to the University to serve as the nucleus for the present Health Sciences Library. Shortly thereafter, the Eisemann Family made a generous donation to help with the establishment of the library. Later, the Kansas City General Hospital Medical Staff Fund allocated dollars critical to the ongoing development of the school.

After the school was authorized in April of 1969, Missouri physicians were invited to become involved even more in the life of the school. They responded superbly. Practicing physicians have been and are full participating members of the Curriculum, Evaluation, and Selection Councils of the school. In addition to the physicians who teach students and residents at the ten affiliated hospitals in Kansas City, many physicians serve as preceptors for students who are on required as well as elective rotations throughout Missouri. Currently, forty to fifty physicians provide such preceptorships each year.

Harry Statland, right, president of the Jackson County Medical Society, transferred ownership of the Society's medical collection to Elmer Ellis, president of the University of Missouri on Feb. 5, 1966. Associate Dean Richardson Noback, left, assisted in the presentation.

Over two hundred physicians worked together for more than a year to make a truly major contribution when the school was beginning. Since the goals of an educational program must determine its characteristics, the school invited these physicians to develop the curriculum content by working in a series of task committees. These committees examined the performance competence reasonably expected of a medical student at graduation, identified the components of those competence, and suggested the relative importance of specific concepts, information, and psychomotor skills. This was one of the first such attempts to have a performance or competence based curriculum. The results provided this school at its beginning with one of the only three curriculum compendia in North America.

Twenty-one years after its beginning, those who have contributed to the development and progress of the school have reasons to be proud of the records of its graduates. Since so many members of the Missouri State Medical Association have contributed so much for so long to the school, to its graduating medical students, and to the physicians in its graduate education programs, the school was pleased to recognize those contributions at its celebration on September 18th, 1992 and looks forward to continued shared educational efforts in the decades ahead.

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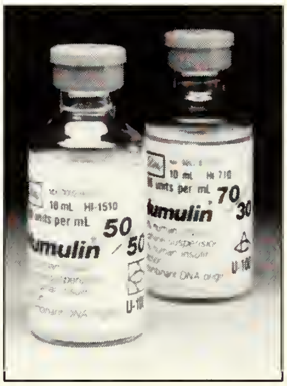

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Honoring Appointments

by

H. Richard McFarland, MD

Occasionally I am asked by a younger colleague how to get patients to honor their office appointments. This anagoge answers the question.

The Novitiate said, "O Master, you are so wise and omniscient -
counsel me in the ways of patients."
The Master said, "How are you troubled?"
"My patients honor not their appointments."

The Sage said, "Have you studied this deviation?"
"O yes, Master."
"And have you offered attendance within the rising of two suns?"
"O yes, Master."
"And what have you perceived?"
"Only two of three arrive for their examination."
"And why is this so?"
"Because of my availability, they think me incompetent."

The Teacher said, "Have you proffered an audience within a fortnight?"
"O yes, Master."
"And what have you observed?"
"But two of four keep their engagements."
"And why is this so?"
"Because most have abandoned their symptoms."

Ecclesiastes said, "Have you availed yourself within the circle of a new moon?"
"O yes, Master."
"And what have you discerned?"
"Only one in three fulfills his commitment."
"And why is this so?"
"They think me condescending and have found an alternate."

The Savant said, "And what have you deduced?"
"O Master, the longer the wait, the greater the attrition."
"And what is the solution?"
"O Master, surely not immediate access, yea even on the Sabbath?"

The Omniscient said, "Does illness know the hour of the day?"
"No, Master."
"Thus I have spoken."

Whereupon the Novitiate threw himself to the ground, rending his clothes and sobbing incontinently - for he had understood but could not accept.

■

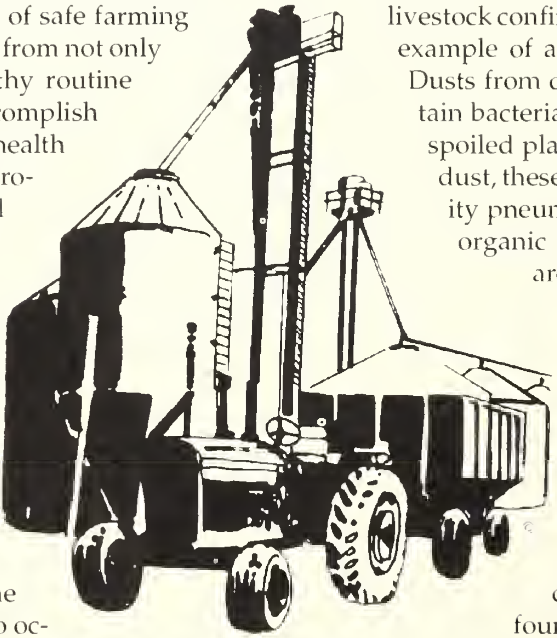
H. Richard McFarland, MD, is a neurologist.
His office address is
Suite 620,
4320 Wornall Road,
Kansas City, Missouri 64111.

Toward Agricultural Safety and Health

by Paul R. Cook, MD
Assistant Professor of Surgery, University of Missouri School of Medicine

Farming is one of the most dangerous professions.[1] Yet it seems disease prevention and health maintenance have been slow to reach the farm. The practice of preventive methods has reached the factory and the urban-suburban areas more readily. Perhaps the farmer's sense of independence, as well as resistance to outside interference in his life, have contributed to this phenomenon. Attempts by government - federal, state, and local - to regulate, i.e. interfere with, his freedom will not be favorably received. Therefore, legislative mandates should not be the primary method to inculcate the principles of safe and healthy farming practices and lifestyles. **Education**, on the other hand, is the method whereby the farmer can be motivated to incorporate these principles into farm life. The vehicles to provide the education are already in place in this state - the University of Missouri Extension system and rural health practitioners. Equipment dealers and seed companies also can have a tremendous impact upon farm families, largely through their close interaction with the families on a regular basis. All of these resources can be utilized to implement safe and healthy farming practices. The focus of the educational efforts should be to appeal to the farmer's common sense and pragmatism. If farm families are shown the benefits of safe farming practices, as well as what can happen from not only dangerous practice but also unhealthy routine practices, behavior will change. To accomplish this education, key issues regarding health and safety must be identified and programs developed to disseminate vital information regarding these issues.

The health and safety problems encountered by farm families result directly from the farming occupation. Theoretically, these problems would be medically addressed by specialist in occupational medicine; however, there are few such specialists, and from a practical standpoint, primary care providers deal with these problems. Allergists and pulmonologists become involved when the diseases related to occupational exposure become advanced. Rural health care providers should maintain a high index of suspicion that occupation related illness is primarily operative when dealing with farm families. Hippocrates urged his students to "take into account your patients' environment," and in 1713, Bernadino Ramazzi added one more question - "What occupation does he follow[2]?" When the answer is "farming," a host of medically relevant factors become operative. Major factors related to health are concerned with exposure to particulates (respiratory), chemicals, noise, and the sun. Major factors relating to safety and accidental injury are the repetitive exposure to mechanical equipment, and acute and chronic injuries related to repetitive physical motion.

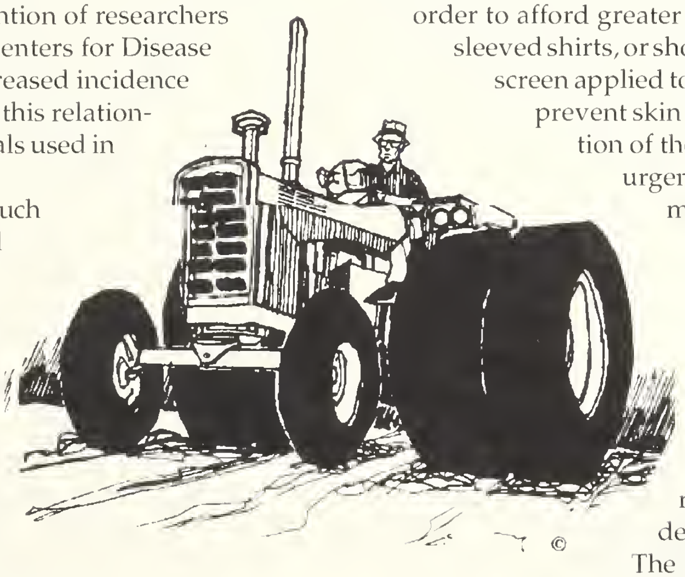


Major occupational threats to the respiratory system confront those who work in agriculture[3]: farmers, ranchers, and agribusiness workers, such as grain elevator employees. There are several areas of focus when addressing respiratory hazards. The first involves the type of agricultural structure. The building use, construction, contents, ventilation, and seasonal factors often determine the hazardous agent and severity of exposure. The aerosolization of animal waste at feeding time in a livestock confinement unit during the winter is an example of a hazardous respiratory exposure. Dusts from decayed grain, hay and silage contain bacteria, fungi, and by products found in spoiled plant material. Upon exposure to the dust, these products can cause hypersensitivity pneumonitis (farmer's lung) and a toxic organic dust syndrome (TODS). A third area of exposure relates to grain dusts. A broad range of respiratory responses can occur to the complex mixtures of dust. Grain handlers at elevator sites are commonly at risk for grain dust exposure. The same pattern of respiratory responses can occur in animal handlers when exposed to livestock confinement dusts and gases. The complex mixtures of dusts and gases found in swine and poultry units are particularly troublesome.

A fifth focus area is exposure to silo gas, which is a generic term for the various oxides of nitrogen produced from silage. These nitrogen oxides can cause sudden death, pulmonary edema, and bronchiolitis obliterans. Silo filler's disease is an example of a disease caused by this type of exposure. Recently stored silage is particularly dangerous, since new silage produces more gas.

Another major focus area, and one that is receiving increased attention nationally, is applied agricultural chemicals. Exposure to fumigants, cholinesterase-inhibiting insecticides, paraquat, anhydrous ammonia, and herbicides affects the respiratory system. While attention has been given mainly to acute exposure and toxicity, the effects of chronic low-dose exposure are now a great concern and are receiving the attention of researchers and governmental agencies. The Centers for Disease Control has recently noted the increased incidence of cancer in farmers and attributes this relationship to chronic exposure to chemicals used in the occupation.

Certain infectious diseases are much more likely to occur in farmers and their families: histoplasmosis, ornithosis, Q fever, bovine tuberculosis, hydatidosis, Newcastle disease, swine influenza, tularemia, and erysipelas. Urban physicians rarely, if ever, see these diseases and might have difficulty diagnosing them. Rural physicians are much more likely to encounter these diseases and should keep current on their diagnoses and treatments.



The chemical problem, which was partially discussed earlier, is a major problem area. It would be unfair to blame farmers for their use of chemicals in the workplace, especially if the finger-pointers are the large industrial polluters, and all of us who drive motor vehicles and improperly use chemicals in our homes, businesses, and urban properties. However, chemicals are polluting the ground water which is often the potable water for the farms. Runoff fertilizer and wastes from livestock containment units contaminate creeks, streams, lakes, and rivers making them unsuitable for wildlife and human use. Toxic chemicals are showing up in water wells used for farm families and livestock. These chemicals are not routinely assayed during potability tests.

Agricultural noise exposure does cause hearing loss in farm families, both acutely and from chronic exposure. Some of the original research in this area was done at the University of Missouri by Dave Baker, Drs. Davis and Thelin, et al.[4] Hearing conservation equipment must be worn when working around machinery, using recreational vehicles such as four-wheelers, and using firearms. Loss of hearing and the accompanying tinnitus is extremely disturbing and results in the gradual isolation of the individual in a world of silence.

Solar exposure increases risk of various types of skin cancer. Basal cell and squamous cell carcinomata can have good cure rates, but they easily can be prevented by wearing protective clothing and head gear. The use of sunscreen lotions also is very important. The most commonly affected areas of the skin are the face, ears, neck, and hands. State health organizations, county extension services, and agricultural equipment and seed producers and dealers must work to make the move from baseball caps with company logos to wide-brimmed hats in order to afford greater protection. Wearing long-sleeved shirts, or short-sleeved shirts with sunscreen applied to the exposed skin will help prevent skin cancer. The gradual depletion of the ozone layer increases the urgency of effecting preventive measures. The effect of less ozone is increased ultraviolet light, which increases the risk of skin cancer.

The health risks related to moving equipment largely involve safety. Large equipment roll-over causes many accidental deaths in rural areas. The use of roll-over protective equipment and safety belts would prevent the majority of these deaths and serious injuries. Safety shields around moving machine shafts prevent maiming injuries, provided that the shields are used and remain on the equipment. Farm families must be encouraged to use personal protective gear such as goggles, face shields, masks and respirators, and gloves to help prevent personal injuries and respiratory exposures.

Having addressed several issues of particular concern in agricultural health and safety, let us return to the concept of education as the prime mechanism to motivate the requisite behavioral changes. Our institutions of higher learning must place greater emphasis on rural health care issues in the curricula of nursing and medical schools, particularly the University of Missouri-Columbia, as it is a land-grant institution whose mission is to provide educational services to agricultural and mechanical programs. The post-doctoral residency training programs in primary care specialties, particularly family and community medicine, should emphasize agricultural health and safety. The program at the University of Missouri potentially could become a national model in providing medical services to rural Missouri in conjunction with University Extension, the county health nursing system, and the School of Nursing. For the children of farm families, FFA, FHA, and 4-H could expand their already excellent programs to include farm health and safety, and incorporate these into the public school curriculum. Perhaps this method may be the most effective of all in changing family behavior in matters of health and safety. How many times have all of us heard "Mommy [or Daddy], buckle your seat belt!" and not complied with our child's wishes?

Regarding environmental issues, which ultimately impact upon our health and safety, a long-range plan must be developed to effect the gradual reversal of unsafe and unhealthy farming practices. A goal of the plan might be the reversion to small to medium-sized family farms with an emphasis on organic farming practices. Models for these farms already exist and are highly successful, namely the Amish farms and certain farms in New England and the Shenandoah Valley in Virginia. Commercial variants of organic farms also exist. The use of herbicides and pesticides should be severely curtailed, ideally eliminated completely. This would certainly not only apply to rural areas but also the urban areas. Conservation methodology should be introduced universally and enhanced where it is already practiced. The State Conservation Agency and the Fish and Wildlife Service could greatly assist in this effort. Progressive zones of vegetation should be created around fields where they interface with waterways, roadways, and static water areas. Trees provide the major natural resource to neutralize pollutants, as was discovered by officials working to clean up Chesapeake Bay. Because of this there is a state-wide effort in Maryland to plant hundreds of thousands of trees around the Bay. Similar tactics should be employed in Missouri to protect our waterways and restore them to their native condition.

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Finally, it should be emphasized that **prevention** is the goal for agricultural health and safety rather than treatment efforts. Certainly this is true for humane reasons; however, in this era of intense concern about health care costs, an ounce of prevention is worth a pound of cure. The savings from the monetary effects of morbidity and mortality would be staggering. An extant example of this fact is the cost of treating a scalping injury caused by a moving shaft. The protective shields cost about $200, while the health care costs in the neighborhood of $500,000. This figure does not account for the tremendous psychological trauma for the victim and the family. Preventive medicine promotes health, while interventional medicine depends upon the presence of disease. Fortunately for everyone, there is now a shift towards the promotion of health and the prevention of disease. However, economic concerns have provided the motivation. For whatever reasons, now is the time to make agricultural safety and health a reality.

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Alpha-1-antitrypsin Deficiency: Rare Cause of Adult Cirrhosis - A Case Report

by Leslie E. Tucker, MD and Perry G. Rawson, MD

Alpha-1-antitrypsin is a glycoprotein which inactivates proteolytic enzymes, especially neutrophil elastase. Infants deficient in this enzyme commonly develop neonatal hepatitis. In adults, the deficiency typically results in emphysema. Only rarely will an adult manifest liver disease. We present a case of adult liver cirrhosis due to Alpha-1-antitrypsin deficiency in a 63-year-old man. Manifestations of alpha-1-antitrypsin deficiency and liver disease are discussed.

Alpha-1-antitrypsin is a autosomal recessive disorder affecting 70,000 to 100,000 people in the United States. Alpha-1-antitrypsin deficiency is commonly associated with centrilobular emphysema in the adult. Deficiency can also lead to liver disease.[1,2] We report a case of cirrhosis of the liver due to alpha-1-antitrypsin deficiency occurring in an elderly male. The importance of considering this entity as a cause of liver disease is emphasized.

CASE REPORT

A 63-year-old white man presented to the hospital with ascites and generalized edema. He had been found to have abnormal liver enzymes ten years previously. At age 59, he had presented with abdominal pain and jaundice. At that time, his bilirubin was 3.2 mg/dl (normal 0.2 - 1.2 mg/dl) and alkaline phosphates 225 IU/L (normal 20-140 IU/L). Gallstones were found and he underwent cholecystectomy and liver biopsy. A cystic duct cholangiogram was normal. Post-operatively, he developed marked jaundice with a bilirubin of 12.7 mg/dl and alkaline phosphatase of 542 IU/L. Liver biopsy was interpreted as showing cholangitis with fibrosis. He recovered and was discharged.

The patient had severe emphysema but had not smoked cigarettes for 40 years. Physical examination of the lungs was normal except for diminished breath sounds and a prolonged expiratory phase. The liver was small, splenomegaly was present and marked ascites was detected.

Laboratory studies revealed a bilirubin of 1.4 mg/dl, alkaline phosphatase of 178 IU/L and an SGOT of 67 IU/L (normal 0-40 IU/L). Prothrombin time was 13 seconds (normal 3-9 seconds). Computerized tomography of the abdomen confirmed a small liver and ascites.

The original liver biopsy done four years previously was reviewed. The initial interpretation of the biopsy was found to be in error. Numerous acidophilic, intracytoplasmic globules were present (Fig. 1). These had been observed in the initial evaluation without follow-up. These globules were strongly positive with PAS stain before and after diastase treatment (Fig. 2). Immunohistochemical stain with alpha-1-antitrypsin antibody was strongly positive (Fig. 3). Other findings included inflammation, cell degeneration and fibrosis. A diagnosis of liver cirrhosis due to Alpha-1-antitrypsin deficiency was made.

A serum protein electrophoresis revealed absence of the alpha-1-globulin plus polyclonal gammopathy. Serum level of alpha-1-antitrypsin was reduced to 33.4 mg/dl (normal 85-213 mg/dl). On phenotyping, the patient was found to be PiZZ. The patient's ascites responded to diuretic therapy. The patient has seven sisters and two brothers but none of them has lung or liver disease. They refused phenotyping.

DISCUSSION

Alpha-1-antitrypsin induced liver disease has been the topic of several recent reviews.[3,4,5,6] Alpha-1-antitrypsin is a glycoprotein consisting of a 365 amino acid polypeptide and three carbohydrate side chains.[7] In deficiency, the enzyme can not be transported from the endoplasmic reticulum of the liver to the blood, where the enzyme normally acts to inactivate proteolytic enzymes, principally neutrophil elastase.[8,9] In lung disease, uninhibited proteolytic enzymes damage the

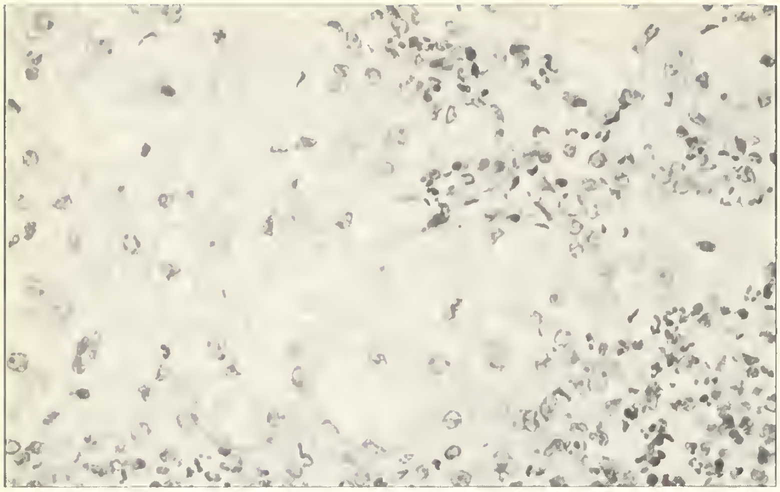

Figure I: Liver Biopsy - H and E - acidophilic intracytoplasmic inclusions.

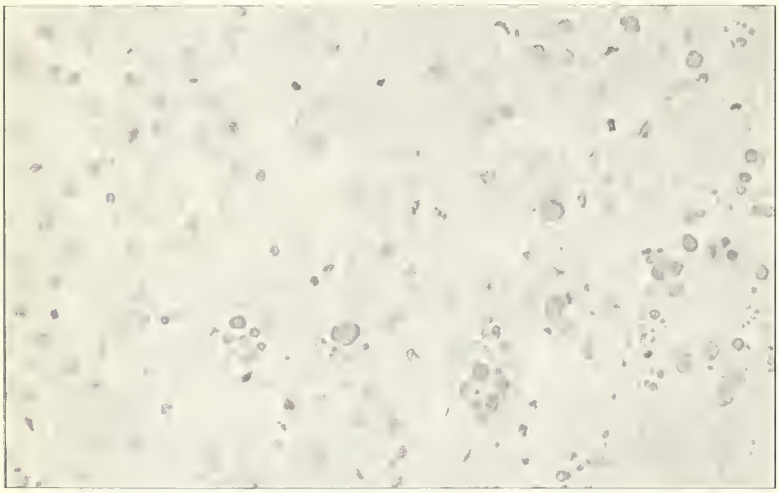

Figure 2: Liver Biopsy - PAS stain after diastase treatment.

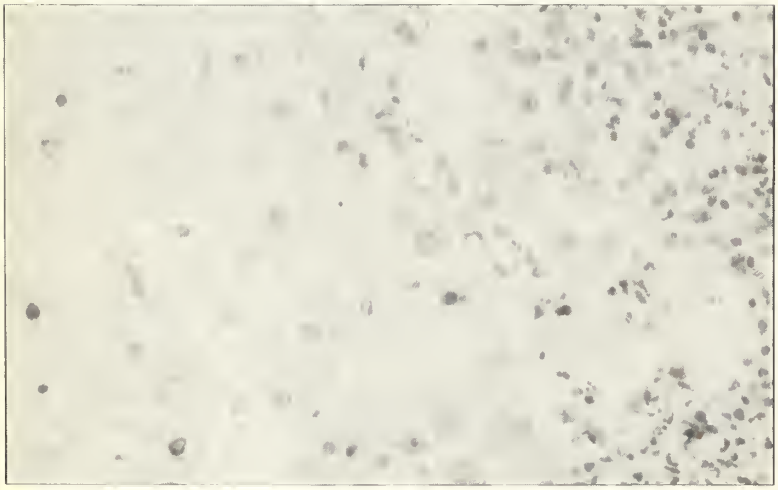

Figure 3: Liver Biopsy - Stain with Alpha-1-antitrypsin antibody.

alveolae. In liver disease, accumulation of Alpha-1-antitrypsin at the rough endoplasmic reticulum results in damage by sheer mass effect, subsequent release of damaging lysosomal enzymes or a cellular response to the accumulated degradation products of alpha-1-antitrypsin.[4,10,11]

GENETICS

The disease is linked to specific mutations in the coding exons of the alpha-1-antitrypsin gene. The expression of the alpha-1-antitrypsin is controlled by dominant alleles at the protease inhibitor (Pi) locus located on the long arm of chromosome 14. There are multiple codominant alleles at a single autosomal locus.[12] The genetic defect has been localized to two amino acid substitutions, valine or alanine at position 213, and glutamine for lysine at position 342.

Normal patients (90% of population) exhibit the Proteolytic Inhibitor (PI) M allele, PiMM, and have 100% alpha-1-antitrypsin activity. Heterozygotes for the allele exhibit PiMZ or PiSZ and have approximately 60% and 35% of enzyme activity respectively. Homozygote for the allele, PiZZ have only 10-15% of enzyme activity. The presence of the PiZZ allele and PiSZ allele have been estimated to occur in one in four thousand and one in 800 adults respectively in the United States.[2] Most disease occurs in the Caucasian population who are homozygous for the disease, PiZZ.

CLINICAL MANIFESTATIONS

Alpha-1-antitrypsin deficiency mainly affects whites and has no sexual predilection.[14,15] About 10% of neonates with the Z homozygous form of Alpha-1-antitrypsin deficiency will develop liver disease.[16] Clinical manifestations include neonatal hepatitis with cholestasis, hepatomegaly, or cirrhosis in early childhood. Bleeding due to vitamin K deficiency may occur.

Most patients recover spontaneously within six months. About 20% of infants with neonatal cholestasis will go to chronic liver disease and cirrhosis. Cirrhosis will progress to liver failure and death unless liver transplantation is done.[17,18,19,20]

Adults with PiZZ phenotype less commonly develop liver disease. When it occurs, it may be mild to severe.[21] Patients may present with abnormal liver enzymes, or symptoms due to portal hypertension such as ascites, variceal bleeding or encephalopathy. An estimated 5 to 15% of adults with homozygous Alpha-1-antitrypsin deficiency will develop cirrhosis.[22,23] Hepatoma may rarely occur. Although concomitant emphysema may be a clue to the diagnosis, it is usually not present.

The question as to whether heterozygotes are at increased risk for liver disease is an important one as an estimated 10% of the United States population has either the PiMZ (3%) or PiMS (7%) phenotype.[13] Infants with heterozygous alpha-1-antitrypsin deficiency PiMZ and PiMS have been noted to have abnormal liver enzymes up to six months of age but no other evidence of liver disease.[24] Hodges performed a five-year prospective study of 1055 liver biopsy specimens from adults, and phenotyped all patients who had the characteristic intracellular inclusions. Of the 185 biopsies which had cirrhosis, there was an increased prevalence of PiMZ in cryptogenic cirrhosis (21%).[25] Carlson and Rakela have confirmed this finding.[26,27]

DIAGNOSIS

Misdiagnosis is usually due to failure to consider the disorder, especially liver disease in the setting of lung disease. In our case, the patient was initially thought to have had secondary biliary cirrhosis due to gallstones and cholangitis. The differential diagnosis in the evaluation of patients with chronic hepatitis would include chronic hepatitis due to hepatitis B and C virus, Hemochromatosis, Wilson's Disease, Drug Induced Liver Disease, Primary and Secondary Biliary Cirrhosis and Autoimmune chronic active hepatitis. The evaluation of the patient with chronic hepatitis has recently been reviewed by Bacon.[28] Table I shows tests which are helpful in the diagnosis of chronic liver disease. Since alpha-1-antitrypsin accounts for nearly 90% of the alpha-1 electrophoretic fraction, a protein electrophoresis is a good screening test, showing a low or absent alpha-1-globulin. Serum levels of the alpha-1-antitrypsin are low. Liver biopsy will reveal the characteristic round droplets within hepatocytes, which stain PAS positive after diastase.[32]

TREATMENT

Treatment of Alpha-1-antitrypsin deficiency is liver transplantation. Alpha-1-antitrypsin deficiency is the most common metabolic disease for which liver transplantation is performed. Five-year survival is 60% and 70% for adults and children respectively.[29,30] After transplantation, the patients become phenotypically normal with normal serum levels of Alpha-1-antitrypsin. Theoretically, gene therapy with transfer of the M allele into those patients homozygous for the Z allele would cure the pulmonary disease but would not affect the liver disease unless the other phenotypic expression in the liver could be ablated. Similarly, correction of low serum levels of Alpha-1-antitrypsin by injection of plasma derived or genetically engineered Alpha-1-antitrypsin would theoretically halt or cure the pulmonary disease but not affect the liver disease as the intracellular inclusions of Alpha-1-antitrypsin which lead to the liver disease would persist. Antenatal diagnosis of Alpha-1-antitrypsin deficiency is also now possible.[3,5,12]

Table I

Diagnosis and Evaluation of Patients with Chronic Hepatitis

DIAGNOSIS	EVALUATION
HEPATITIS B	HBsAg, Anti-HBcAg, HBeAg
HEPATITIS C	Anti-HCV (confirm with RIBA assay)
HEPATITIS DELTA	HBsAg, Anti-HDV, HDAg
HEMOCHROMATOSIS	Increased Serum Iron Iron Saturation > 50% Increased Serum Ferritin Increased Liver Iron
Wilson's Disease	Low Serum Ceruloplasmin Increased 24 hr urine copper Increased Liver Copper
AutoImmune	Antinuclear Antibody Smooth Muscle Antibody
Primary Biliary Cirrhosis	Antimitochondrial Antibody Increased IgM (quantitative immunoglobulin)
Alpha-1-antitrypsin	Low Serum Alpha-1-antitrypsin Low Alpha-1 globulin
Secondary Biliary Cirrhosis	Biliary Ultrasound Cholangiography (ERCP)

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The Authors

Leslie E. Tucker, MD, is with the division of gastroenterology and Perry G. Rawson, MD, is with the department of pathology at St. John's Mercy Hospital in Washington, Missouri.

For reprints:
Leslie E. Tucker, MD
Division of Gastroenterology
St. John's Mercy Hospital
200 Madison Avenue
Washington, Missouri 63090

Hepatitis C Testing: Interpretation, Implications, and Counseling

by Paul R. Becherer, MD and Bruce Bacon, MD

New molecular biology techniques recently identified hepatitis C virus (HCV) as the major cause of non-A, non-B hepatitis. Serologic assays for HCV specific antibodies are a significant advance, but they require cautious interpretation due to problems with the tests' sensitivity and specificity. Patients with suspected HCV infection should be thoroughly evaluated to verify the presence of infection, to exclude other forms of chronic liver disease, and to determine the extent of liver damage prior to considering treatment.

Hepatitis C virus is the newly identified etiologic agent responsible for most cases of both post-transfusion and "sporadic" non-A, non-B hepatitis in the United States and around the world.[1-4] Hepatitis C infections are greatly under-recognized and under-reported[5], yet the Centers for Disease Control (CDC) estimates that approximately 170,000 new HCV infections occur annually in the United States.[6] Chronic hepatitis is the ninth leading cause of mortality in the United States, and HCV is probably the most common cause of nonalcoholic liver disease.[1]

New molecular biologic techniques have allowed the isolation and characterization of hepatitis C virus and the development of an immunoassay to detect specific antibody. As with any diagnostic test, however, the interpretation of this HCV assay depends largely on the context under which it is performed.

EPIDEMIOLOGY AND CLINICAL PRESENTATION

Hepatitis C virus is a small enveloped RNA virus with some similarities in structure and genomic organization to flaviviruses (yellow fever, dengue).[7-11] Preliminary studies suggest that several strains exist with genetic and immunogenic variability but with unknown implications for infectivity, pathogenicity, virulence, and diagnosis.[9,12-14]

Our understanding of the epidemiology and clinical course of hepatitis C infection is still based largely on investigations of post-transfusion non-A, non-B hepatitis and intensive surveillance studies by the CDC.[4,15] Parenteral transmission via intravenous drug use or transfusion accounts for fewer than half of the reported cases of acute symptomatic HCV infections. While early case control and small cohort studies failed to identify a risk of sexual transmission, a slightly higher seroprevalence has been demonstrated in homosexual males, sexual partners of intravenous drug abusers, prostitutes and their clients, and heterosexuals with multiple sexual partners.[16-22] The prevalence of hepatitis B virus and human immunodeficiency virus (HIV-1) serologic markers is significantly higher in these same sexually active populations, however. Sexual transmission may be facilitated by co-infection with HIV-1.[23] Vertical transmission (from infected mother to baby) is also rare without concomitant HIV-1 infection.[24-28] Household or horizontal transmission appears to be rare; the presence of virus in human secretions is low or undetectable.[4,29-34] Thus, only about half of Americans with acute HCV infection have a history of recognized exposure.

Most acute HCV infections are not clinically apparent. Only 10%-25% of patients with post-transfusion HCV infection develop symptoms or jaundice. Approximately 50% of patients with transfusion-related HCV infection develop chronic hepatitis; the risk of chronic hepatitis following "sporadic" HCV infection remains debatable.[6,35-37] Ultimately, chronic infection may result in chronic active hepatitis, cirrhosis, or hepatocellular carcinoma.[38,39] Unfortunately, serum aminotransferase levels and clinical findings correlate poorly with the activity or severity of hepatic damage.[31]

TESTING

The first specific HCV assay detected antibody against a non-structural epitope (e.g. not a surface, envelope, or core component). This enzyme immunoassay (EIA) measured non-neutralizing antibody, associated with infectivity rather than immunity.[1,40,41] The first generation assay was inadequate for several reasons, including a prolonged period between infection and seroconversion, questionable sensitivity, and false positive results associated with other forms of liver disease with a hypergammaglobulinemic state.[31,40-47]

A second generation EIA assay introduced in the spring of 1992 has supplanted the first generation assays. The new test detects antibodies directed against other antigens, including structural protein epitopes (a core recombinant peptide, C-22-3) that occur earlier in seroconversion, giving improved sensitivity and specificity.[48-51]

A number of supplemental assays (RIBA - recombinant immunoblot assay [Chiron], MATRIX - a semi-automated recombinant immunoblot assay [Abbott]) are under development and may clarify the significance of a reactive anti-HCV screening assay. A reactive supplemental test strongly suggests a true-positive result; at present, an indeterminate result must also be considered positive.

MEDICAL EVALUATION AND COUNSELING

As with any laboratory test, the proportion of falsely positive screening EIA results is dictated by the specificity of the assay and the prevalence of the infection in the population screened. Only about 33% of EIA-positive volunteer blood donors have positive results on supplemental testing, compared with 80%-90% of EIA-positive parenteral drug users or transfusion recipients.[52]

Fortunately, medical tests are seldom interpreted in a vacuum of information. The interpretation of a positive test for HCV requires additional information, including medical history, family history, risk factors for transmission (transfusions, intravenous drug use), results from a physical examination and ancillary laboratory tests, as shown in Table 1. The goal is to verify that the patient is indeed anti-HCV positive, assess the risk of HCV infection and presence of liver disease, and finally determine whether the patient with suspected infection has acute or chronic HCV disease.

When a patient is tested as part of a routine screening protocol, such as that performed on blood donors, independent of recognized exposure or suspicion of clinical hepatitis, a positive EIA must be carefully interpreted. Testing of a follow-up serum specimen should verify that anti-HCV is present. If subsequent careful history-taking, physical examination, and laboratory evaluation fail to corroborate a known risk or evidence of hepatic disease, the EIA may be falsely positive. Consideration might be given to supplemental testing and follow-up ALT determination in six months to further support the presumption of the absence of hepatic disease. While seropositive patients who have no underlying risk, normal ALT levels, and a negative supplemental test may be reassured, they must still be excluded from donating blood.

In a patient with elevated serum aminotransferases but no recognized parenteral exposure, a positive EIA must be cautiously interpreted due the possibility of a false positive. If a follow-up serum specimen is also anti-HCV EIA positive, supplemental testing should be considered when available. Other forms of chronic hepatitis should be evaluated as outlined in Table 2.

Physical examination and the magnitude of aminotransferase level elevation do not correlate with the clinical or histologic severity of chronic hepatitis. Therefore, in patients with persistently elevated serum aminotransferase activity, a liver biopsy should be considered to determine the cause of the liver disease and the extent of hepatic involvement. For example, in young or middle-aged patients with active or progressive liver disease (e.g. chronic active hepatitis with or without bridging necrosis, bridging fibrosis, active cirrhosis, or chronic persistent hepatitis with increased portal fibrosis), therapy with interferon alfa should be considered.

A positive EIA in a patient with a recognized parenteral exposure correlates with infectivity but does not differentiate between acute and chronic infection. Serial serum ALT determinations may help delineate this. If ALT levels remain elevated for more than six months, chronic infection is likely. If ALT levels are repeatedly normal over a six-month period, one might consider that the anti-HCV result is a false positive, that the infection has resolved, or that it is causing only minimal liver disease. Hepatitis C virus-related chronic hepatitis is often characterized by periods of normal ALT levels. Therefore, a single normal ALT determination does not exclude the possibility of continued disease, and the measurement should be repeated.

Counseling is imperative.[53] Differentiation between hepatitis C virus infection, human immunodeficiency virus (HIV), and other forms of hepatitis should be made.

Although the risk for sexual transmission of HCV appears low, the anti-HCV positive patient should be counseled about the potential of sexual transmission. Latex condoms decrease the risk of other sexually transmitted viral infections; theoretically, the proper use of condoms may reduce transmission of HCV. Because HCV infection has been associated with having multiple sexual partners, patients who are not in mutually monogamous relationships should be counseled about the risk of transmission of HCV, as well as hepatitis B virus and HIV. They should be instructed to reduce the number of sexual partners. Exposed sexual partners might be considered for HCV testing and counseling. If HCV test results are positive, partners should be evaluated for the presence of liver disease.

The risk of perinatal transmission is low. At this time, there are no special precautions or treatment for HCV seropositive pregnant women or their children. Likewise, the risk of household transmission appears negligible. Items that might be contaminated with

Table 1

Evaluation of Patients with Positive anti-HCV EIA

Past Medical History	hepatitis, jaundice, transfusions, IVDU, sexual history
Family History	liver disease, hepatitis, Wilson's disease, alpha-1-antitrypsin deficiency
Physical Examination	spider angioma, icterus, asterixix, ascites, splenomegaly, hepatomegaly, engorged veins, gynecomastia (males)
Laboratory	ALT, AST, bilirubin, albumin, prothrombin time, and complete blood count (platelets)

Table 2

Laboratory Evaluation of Patients with Chronic Elevation of Serum Liver Enzymes

Diseases to be ruled out	Suggested Laboratory Test
Hemochromatosis	Serum iron, transferrin, ferritin
Wilson's disease	Ceruloplasmin, Copper
Alpha-1-antitrypsin deficiency	Alpha-1-antitrypsin
Hepatitis B	HBsAg
Autoimmune hepatitis	anti-nuclear antibody anti-smooth muscle antibody
Primary biliary cirrhosis	anti-mitochondrial antibody

blood, such as toothbrushes and razors, should not be shared. Open skin lesions should be covered.

The patient should inform their health care providers of their anti-HCV status. Potentially hepatoxic insults, such as excessive alcohol consumption and use of certain hepatoxic drugs, should be avoided. No specific work or leisure restrictions are necessary.

PROGNOSIS

The clinical implications for an asymptomatic anti-HCV-positive individual remain to be defined. The relative risk of and timing of the development of chronic active hepatitis, cirrhosis, and hepatocellular carcinoma appear to be extremely variable. Although anecdotal reports note the occasional occurrence of hepatic decompensation over several years' time, a follow-up study by Seeff et al, over 18 years, failed to demonstrate a difference in mortality between transfusion recipients with non-A, non-B transfusion hepatitis and a control population.[54]

TREATMENT

Due to its cost, inconvenience, toxicity, limited response rate, and high relapse rate, treatment with interferon alfa for hepatitis C viral infection is generally reserved for patients with clinical evidence of advanced liver disease or an aggressive histologic lesion -- such as bridging necrosis, fibrosis, or active cirrhosis. The proper therapy for patients with less aggressive disease is not yet clearly defined. As previously discussed, patients with other forms of chronic hepatitis may have a false-positive anti-HCV EIA, leading to an erroneous diagnosis of HCV infection. Since autoimmune chronic hepatitis, in particular, may worsen with treatment for HCV, a complete evaluation is warranted for all patients prior to embarking on therapy for presumed HCV-related disease.[55-57]

Hepatitis C virus seropositive patients who have clinical or histological evidence of active liver disease should be considered for therapy. Several recent studies have demonstrated the efficacy of interferon alfa in the treatment of patients with chronic hepatitis C infection.[5,58-61] At a dosage of 3 million units administered subcutaneously three times a week for six months, about 50% of patients have a significant decrease in aminotransferase levels accompanied by improvement of the histologic findings and a decrease of viremia. Approximately 20% of patients develop side effects, such as myalgia, headache, and fever. Unfortunately, about 50% of patients who initially respond have a biochemical relapse after discontinuation of interferon alfa.

In summary, new methods for testing and for treating chronic hepatitic C virus are available. Seropositive patients should be carefully evaluated to verify the diagnosis of HCV infection, and when treated, patients must be observed closely.

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The Authors

Paul R. Becherer, MD, is an assistant professor of internal medicine in the division of infectious diseases and immunology and Bruce R. Bacon, MD, is professor of internal medicine and director of the division of gastroenterology and hepatology at St. Louis University Medical Center.

For reprints:
Paul R. Becherer, MD
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❖ **Fernando J. DeCastro, MD,** P.O. Box 397, Viburnum, MO 65566, has become a member of the Mineral Area Medical Society. Dr. DeCastro received his medical degree at Tulane University, New Orleans, LA, in 1962. He completed his residency at the University of Michigan, Ann Arbor, MI. Dr. DeCastro specializes in pediatrics.

❖ **Carla G. Kester, MD,** 3231 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Kester received her degree at the University of Missouri-Columbia, in 1986. She completed her residency at the University of Missouri-Columbia. Dr. Kester specializes in plastic surgery.

❖ **Nathan L. Kester, MD,** 3231 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Kester received his medical degree at the University of Washington, Seattle, WA, in 1984. He completed his residency at the University of Missouri Hospital & Clinics. Dr. Kester specializes in radiology.

❖ **David R. Mehr, MD,** Dept. of Family & Community Medicine, MA306E MU Hospital & Clinics, Columbia, MO 65212, has become a member of the Boone County Medical Society. Dr. Mehr received his medical degree at the University of California, San Francisco, CA, in 1976. He completed his residency at the University of Michigan, Ann Arbor, MI. Dr. Mehr specializes in family practice.

❖ **John J. Russell, MD,** 14 Doctors' Park, Cape Girardeau, MO 63701, has become a member of the Cape Girardeau County Area Medical Society. Dr. Russell received his degree at the University of Missouri-Columbia, in 1988. He completed his residency at St. Francis Medical Center, Peoria, IL. Dr. Russell specializes in internal medicine.

❖ **John J. Seaberg III, MD,** 1504 E. Broadway, Suite 214, Columbia, MO 65201, has become a member of the Boone County Medical Society. Dr. Seaberg received his medical degree at the University of Oklahoma, OK, in 1980. He completed his residency at the University of Missouri-Columbia. Dr. Seaberg specializes in plastic surgery.

❖ **Barbara J. Tellerman, MD,** 1502 E. Broadway, Columbia, MO 65201, has become a member of the Boone County Medical Society. Dr. Tellerman received her medical degree from Boston University School of Medicine, Boston, MA, in 1983. She completed her residency at the University of Missouri-Columbia. Dr. Tellerman specializes in radiology.

RESIDENTS

Thomas C. Schnurr, MD - *Family Practice/Anesthesiology*
Orlando A. Galindez, MD - *Ophthalmology*

STUDENTS

St. Louis University
Jeffrey A. Bailey
Julie Ball
Joseph M. Bellezzo
Brian Borsook
Michael L. Broeker
David S. Bush
Troy Caldwell
Stacie Camp
Rebecca C. Carlson
Sean T. Carroll
John Caster
Stephen G. Comeau
Kevin Corrigan
Cherise Cortese
Jonathon Coyle
Reed Dimmitt
Paul Dittes
Kathryn Dobmeyer
Morris S. Dressler
Brett Foersterling
Ann French
Christi J. Garrett
David M. Glick
Donald J. Greco Jr.
Claudia Hackethal
Christina Helterbrand
Terri Hoffman
Harvey Hsu
Daniel B. Hurley
Shahrzad Jamalabadi
Richard C. Jenkins
Allan Joseph
Amy Kapanjie
Patrick Kennedy
Sophia Kim
Christine Klein
Jeanne Kornhardt
Angela M. Kreisman
Kevin J. Kulwicki
Michael J. Larson
Thomas P. Leib
James M. Kurbat
Ronald J. Loucks
Laurie Martin
Kamran M. Massoumi
Shawn Meader
Shelly Meents
Scott Morrison
Hitesh Movalia
Joseph D. Murphy
Robert E. Nakken
Joseph J. Nania
Sean Nealon

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John Nichols
Barry Ogin
Tammy Oleskevich
Jennifer A. Ondr
Hyung M. Paek
Thomas J. Panasci
Payal R. Patel
Rajesh Patel
Douglas P. Poon
James R. Porter
Christopher Pruett
Christopher M. G. Puls
Traci Rappaport
Neil F. Rebbe
Margaret A. Rempe
Jamie L. Renbarger
Michael J. Reschak
Vincent S. Rich
Ron Rowberry
Adam J. Rubinstein
Marc Schnapper
Alexander Schuetz
Tina Schwarz
Deborah A. Simmons
Mythili Srinivasan
Ken Stevenson
Connie D. Streubel
Marion F. Svendrowski Jr.
Cosima Swintak
Kendall L. Takara
Brett W. Teten
Dori Thomas
Jeff Tjader
Zoran Urosevich
Theodore Vandernoot
Mark Vaughan
Joseph D. Vijungco
Monica E. Wagner
Chantal G. Walsh
Alice L. Wilkenfeld
Philip Woodworth
Edwin Yuen
Matthew Zahn
Ali Ziaee

University of Missouri-Kansas City

Aimee B. Baird
Brenda K. Boehm
Lisa D. Lawrence
Matthew Nuhn

Washington University

Joseph A. Aronovitz
Alyson D. Buckner
Timothy M. Capstack
Lori D. Clements
Susan F. Cohan
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■ **Marvin L. Bills, MD,** Pensacola, Florida, died November 30, 1992, at age 93. Dr. Bills received his medical degree at the University of Kansas, in 1923. He practiced neuropsychiatry in Kansas City until retiring in 1979. Dr. Bills had been on staff at St. Luke's, St. Mary's, Trinity, Kansas City General, VA-Wadsworth hospitals and the Cabot Clinic. He was assistant professor of neuropsychiatry at the University of Kansas Medical Center from 1929-1955. Dr. Bills was a member of the American Medical, Missouri Medical and Jackson County Medical Associations and the American Psychiatric Association.

■ **Virgil O. Fish, MD,** Town and Country, Missouri, died November 18, 1992, at age 85. Dr. Fish received his medical degree at Washington University School of Medicine, St. Louis, in 1930. He was in private practice for 55 years in midtown St. Louis and then in Clayton. During World War II, he was head of the field hospital in China and was awarded the Bronze Star for his work. Dr. Fish was an instructor in the proctology department at Washington University during the 1960s and 70s. He was on the staffs of Missouri Baptist and Deaconess Hospitals. Dr. Fish was a fellow of the American College of Surgeons, a member of the St. Louis Metropolitan Medical Society, and both the Proctological Society of St. Louis and the American Proctologic Society.

■ **John Hardy, MD,** Kansas City, Missouri, died November 29, 1992, at age 65. Dr. Hardy received his medical degree at the University of Kansas, Lawrence-Kansas City, in 1958. He was the regional medical director for the American Telephone and Telegraph Co. from 1975 until he retired in March. He conducted a private practice from 1961 to 1975. Dr. Hardy was a member of the Metropolitan Medical Society of Greater Kansas City, the Missouri State and American Medical Associations. He served as speaker for the House of Delegates of the American College of Occupational and Environmental Medicine, past president of the Great Plains College of Occupational and Environmental Medicine.

■ **Paul A. Knepper, MD,** St. Joseph, Missouri, died October 30, 1992, at age 85. Dr. Knepper received his medical degree at Northwestern University Medical School, Chicago, Illinois, in 1933. He was co-founder of the former Thompson-Brumm-Knepper Clinic in 1941 and served as chief of surgery at the clinic for 31 years. Dr. Knepper also served on the Missouri Board of Examiners and had been president of the St. Joseph Board of Health. During World War II, he served in the Army Air Corps as flight surgeon with the rank of lieutenant colonel. He had been a staff member at the former Methodist Medical Center and St. Joseph Hospital. Dr. Knepper was an active charter member of the Northwestern University Medical School Nathan Smith Davis Club and in 1988 received the honor of Distinguished Fellow of the Medical School Alumni Association. He served as a representative of the Social Welfare Board of the Buchanan County Medical Society from 1954 to 1970. He was also a member of the Missouri State and American Medical Associations, Western Surgical Association, Missouri State Surgical Association, Kansas City Surgical Association, a Diplomat of the American Board of Surgery and a Fellow of the American College of Surgeons and International Society of Surgery.

■ **G. Leland Melson II, MD,** St. Louis, Missouri, died November 10, 1992, at age 53. Dr. Melson received his medical degree at Washington University School of Medicine, St. Louis, in 1965. He was on the faculty at Washington University for 20 years and was head of clinical ultrasound at the Mallinckrodt Institute since 1977. He was a member of the Radiological Society of North America, a fellow of the American College of Radiology, a member of the board of directors of the Missouri Radiological Society, and a member of a consensus-development panel for the National Institutes of Health. Dr. Melson was also a member of the Alpha Omega Alpha national medical honorary group and vice president of its local chapter at Washington University. He was also past president of the Greater St. Louis Society of Radiologists.

■ **Helman C. Wasserman, MD,** St. Louis, Missouri, died November 25, 1992, at age 83. Dr. Wasserman received his medical degree at Washington University, St. Louis, in 1932. He was a professor emeritus of obstetrics and gynecology at Washington University Medical School and maintained a private practice in St. Louis County. Dr. Wasserman served on the staff of Jewish and Barnes Hospitals and headed the obstetrics and gynecology department at Jewish Hospital from 1953 to 1956. He was a member of the American College of Obstetricians and Gynecologists.

■ **George C. Wee, MD,** Chesterfield, Missouri, died November 30, 1992 at age 86. Born in China, Dr. Wee received his medical degree at the University of Louisville School of Medicine, Louisville, Kentucky, in 1931. He practiced on the Philippine island of Manila during World War II, and then in Lancaster, Pennsylvania. Dr. Wee practiced medicine for more than 50 years. He was a former chief of surgery at the Veteran's Administration Hospital at Jefferson Barracks. During the past ten years he was in private practice in St. Louis. Dr. Wee was a member of the International College of Surgeons, the American College of Surgeons and the American Society of Abdominal Surgeons.

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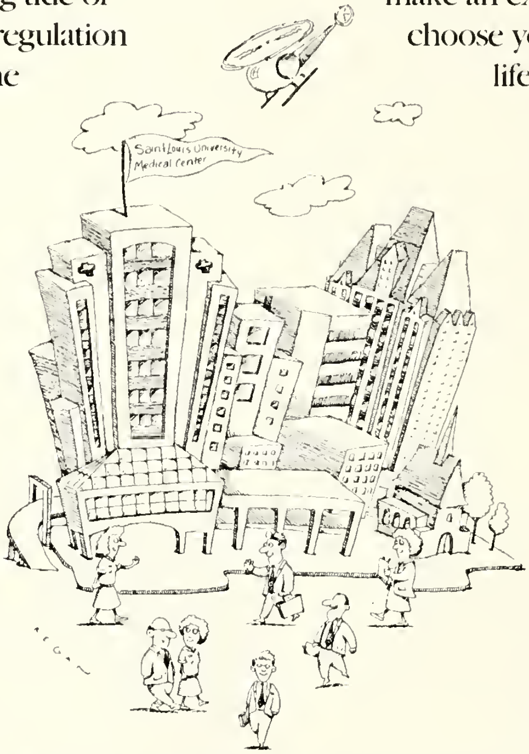
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Henry Stonnington, MD

Henry H. Stonnington, MD, has been appointed chairman of the MU department of physical medicine and rehabilitation. Dr. Stonnington is leaving the positions professor of rehabilitation medicine at Medical College of Virginia and medical director and vice president for medical services at Sheltering Arms Hospital. The rehabilitation program and Sheltering Arms was named best of its kind by the National Association of Rehabilitation Facilities in 1989.

He will serve as medical director of the Howard A. Rusk Rehabilitation Center in addition to academic duties.

Dr. Stonnington is founder and treasurer of the International Association for the Study of Traumatic Brain Injury and founder and editor-in-chief of Brain Injury, an international journal based in London.

Danny Wedding, PhD, professor of psychiatry and director of the Missouri Institute of Mental Health (MIMH), is the principal investigator for a grant from the National Institute of Mental Health. The two-year award will fund the creation of an innovative exhibit at the St. Louis Science Center designed to educate visitors about mental health.

MIMH, part of the MU-C School of Medicine, will be a partner in the project with the Science Center and Pathways to Promise, a national interfaith task force that educates the clergy and other members of religious groups about the problems and needs of the mentally ill. The grant is one of three Science Education Partnership Awards to be given nationally in 1992 and the only award directed chiefly for use at a science center.

The exhibit will consist of portraits of five areas of mental illness. Using videodisc technology, people visiting these exhibits will be able to click on a patient and get a brief description of a problem from someone who has dealt with it, or they can click on a doctor and get scientific information about the condition. It is scheduled for introduction in fall 1993.

A gift by **F.A. Barnett, MD,** and his wife, **Rita Sue** will set up the school's first scholarship based mainly on student need at the MU School of Medicine. Dr. Barnett received his bachelor's degree from MU, and medical degree in 1933. He has maintained a general medical practice in Paris, Missouri, since 1938. The Barnett's generosity has benefitted several educational institutions in the state. They established a loan fund at the Washington University School of Medicine and an endowment that annually provides scholarships to five graduation seniors at Paris High School. Income from the Floyd A. Barnett, Scholarship Fund will provide one or more awards each year to MU medical students.

The very first graduate of MU's four-year medical program has endowed the School of Medicine with a donation to rename a 116-seat auditorium after his parents. **R. Phillip Acuff, MD,** a St. Joseph radiologist, is honoring his parents, the late Ida C. and Robert L. Acuff. Dr. Acuff was at the top of the alphabetical list on commencement day 1957. The auditorium, which is used for continuing education courses and other seminars and lectures, was dedicated during the School of Medicine's annual alumni weekend.

St. Louis University

In an effort to keep pace with practice demands in the field of physical therapy, the School of Allied Health Professions at St. Louis University has received approval from the University's board of trustees to convert its bachelor of science in physical therapy degree to a master in physical therapy degree, effective fall of 1993. Currently, 50 percent of physical therapy programs offer a master's degree as the entry level degree.

The new curriculum will provide additional physical therapy knowledge and skills in the areas of physical development through the life span, biomechanical concepts and applications, and communication and instructional processes.

The master's degree program will take a minimum of five and one-half years to complete. After four years, the students will have earned a bachelor of science in exercise science degree. The master in physical therapy degree will be completed in an additional one and one-half years.

Bruce Bacon, MD

Bruce Bacon, MD, professor of internal medicine and director of the division of gastroenterology and hepatology, has received a grant to study how cirrhosis is formed in chronic iron overload or hemochromatosis. The three-year

Continued on page 45

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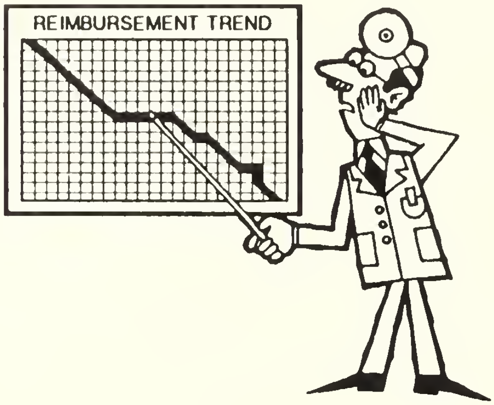

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Continued from page 43

grant is funded by the National institute of Diabetes and Digestive and Kidney Diseases.

The focus of Dr. Bacon's research is to understand how chronic iron overload results in the development of cirrhosis, using a model of experimental hemochromatosis he developed ten years ago.

Richard D. Bucholz, MD, associate professor of surgery in the division of neurosurgery, is researching the effects of a drug (Sygen) on spinal cord injuries. The nationwide, multicenter study is funded by Fidia Pharmaceutical.

When the spinal cord is injured, neurotransmitter are released at the site of nerve damage. The excessive amount of neurotransmitters released at injury can stimulate the nerve cells and cause cell injury and death. Gangliosides, naturally occurring substances in the body, allow neurotransmitter to carry out normal function but prevent them from destroying undamaged nerve cells.

Sygen, which is a type of ganglioside, is expected to perform the same protective function as the naturally occurring substance and stimulate nerve growth. Dr. Bucholz will assist in determining the beneficial effects of Sygen in patients with spinal cord injuries.

The FDA has given expedited approval to a study of Sygen. Dr. Bucholz is recruiting patients for his research. Candidates must be given the drug within 72 hours of injury. For more information, contact Marilyn Diebold, R.N., study coordinator, at 314/577-8797 or beeper number 314/275-9856.

Bernard Chaitman, MD

Bernard R. Chaitman, MD, professor of internal medicine and director of the division of cardiology, has received a one-year grant from Sterling-Winthrop to study Fantofarone, a new calcium channel-blocking drug for the treatment of chronic angina and coronary artery disease.

The drug is a member of the original class of calcium antagonists with a distinct calcium channel receptor site different from drugs currently available. It offers the potential to benefit both patients who require drug therapy for the relief of symptoms and patients who may not have responded satisfactorily to other calcium channel-blocking drugs.

Dr. Chaitman's research will focus on the effectiveness of Fantofarone in patients with chronic angina over a six-week interval. Patients who participate in the study and benefit from the drug will be allowed to continue on long-term therapy.

Rodney M. Coe, PhD, professor and chairman of the department of community medicine, has been appointed to serve on the National Advisory Council on Aging of the National Institutes of Health.

The council is a highly influential body that offers advice to the. Secretary of Health and Human Services. The 18-member group also advises the assistant secretary for health, the director of the NIH and the director of the National Institute on Aging in an effort to improve the quality of life and health care for the aged. Dr. Coe and other members of the advisory council will review grants related to aging, make suggestions on what projects should be funded and help set the country's priorities in the care of the elderly.

Henry Stratmann, MD, associate professor of internal medicine, division of cardiology, has received a one-year grant to study the best way of delivering the drug Dilacor to patients suffering from stable angina. Stable angina, or chest pain, occurs in patients who have coronary artery disease.

Washington University

Cathy J. Lazarus, MD, has been named assistant dean for student affairs at Washington University School of Medicine. Dr. Lazarus, who was named director of the Washington University Medical Campus Student and Employee Health Services in 1990, will continue in that position in addition to the responsibilities of assistant dean.

Researchers have received a grant from the National Institute of Mental Health to study the heritability of schizophrenia. **Steven O. Moldin, PhD,** assistant professor of psychiatry, will evaluate 50 schizophrenia patients and three of their family members to study biological traits common in patients and their relatives who are not suffering from the disease. All will be tested for attention disorders.

Moldin and colleagues will design complex mathematical models that attempt to explain how a gene or genes become faulty and transmit schizophrenia. The transmission of schizophrenia in families follows an unusual pattern. The disease skips generations and the pattern is difficult to discern. Dr. Moldin's goal is to strengthen the genetic model for schizophrenia by including biological data on attention disorders.

In November Dr. Moldin presented the results of a mathematical simulation study to assess the power of directly incorporating biological data in the genetic analysis of schizophrenia at the 7th annual meeting of the Society of Research in Psychopathology in Palm Springs, California and at the 42nd annual meeting of the American Society of Human Genetics in San Francisco.

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9 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

10 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

15 to 17 - *St. Louis*: Advanced Trauma Life Support Course. 24 credit hours. Contact Mary Keegan, R.N., St. Louis University School of Medicine, 577-8365.

16 to 23 - *St. Martin, French West Indies*: Topics in Hematology and Oncology. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

11 - *St. Louis*: City-Wide Radiology Conference. For more information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

21 to 23 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Thoracolumbar Spine Surgery, An Atlas. 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

27 - *St. Louis*: 5th Annual Joseph E. Flynn Lecture Series in Surgery. 4 credit hours. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

25 to 29 - *St. Louis*: Medicolegal Death Investigator Training Course. 33 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

February

5 - *Kansas City*: Neonatal Care. 7 credit hours. Contact The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132, 816/276-4306, Toll free, in Missouri, 800/892-5771, ext. 4306, bordering states, 800/821-5140, ext. 4306.

6 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

6 & 7 - *St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course. 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

7 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

8 - *St. Louis*: 7th Annual Daniel R. Biello Memorial Lecture by Richard Wahl, M.D., "New Horizons in Oncologic Nuclear Medicine." For more information contact the Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

20 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

25 to 27 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Temporal Bone Surgical Dissection - Exploring New Surgical Instrumentation with Midas Rex Hands-On Workshop. 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

27 - *St. Louis*: Women and Men in Health Care. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

March

: Malpractice. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

6 to 13 - *Vail, CO*: Update in Clinical Medicine. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

7 to 9 - *San Diego*, CA: 13th Annual Conference on Peritoneal Dialysis. Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

8 - *St. Louis*: Cost Efficiency of Screening for Colon Cancer. City-Wide Radiology Conference by David Gelfand, M.D. For more
information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

15 to 17 - *St. Louis*: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part I: Cervical Spine Trauma. 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

18 to 20 - *St. Louis*: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part II: Thoracolumbar Spine Trauma. 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

26 - *St. Louis*: Neonatal Pharmacology. 6.25 credit hours. Contact Patricia Nash, the St. Louis University School of Medicine, 314/577-8365.

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Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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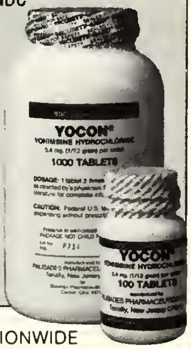

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PRAVACHOL® (Pravastatin Sodium Tablets)

CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and lactation. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia. Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine: The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin*, *antacids* (1 hour prior to PRAVACHOL), *cimetidine*, *nicotinic acid*, or *probucol*, no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p<0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p<0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p<0.05$). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter^2). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions: An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting

Reproductive: gynecomastia, loss of libido, erectile dysfunction.

Eye: progression of cataracts (lens opacities), ophthalmoplegia.

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

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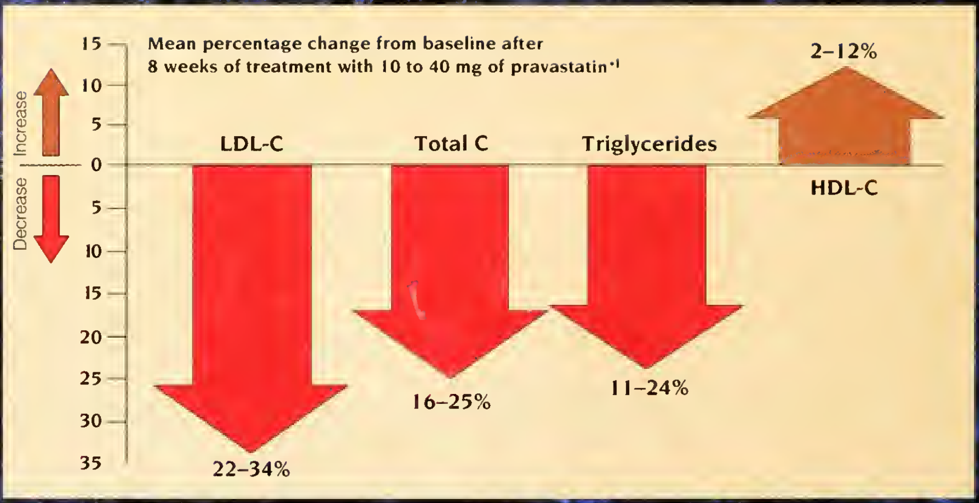

*Each arrow represents a range of means derived from a single placebo-controlled study that included 55 patients treated with pravastatin.

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Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

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pravastatin sodium 20 mg tablets

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.

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VOLUME 90, NUMBER 2

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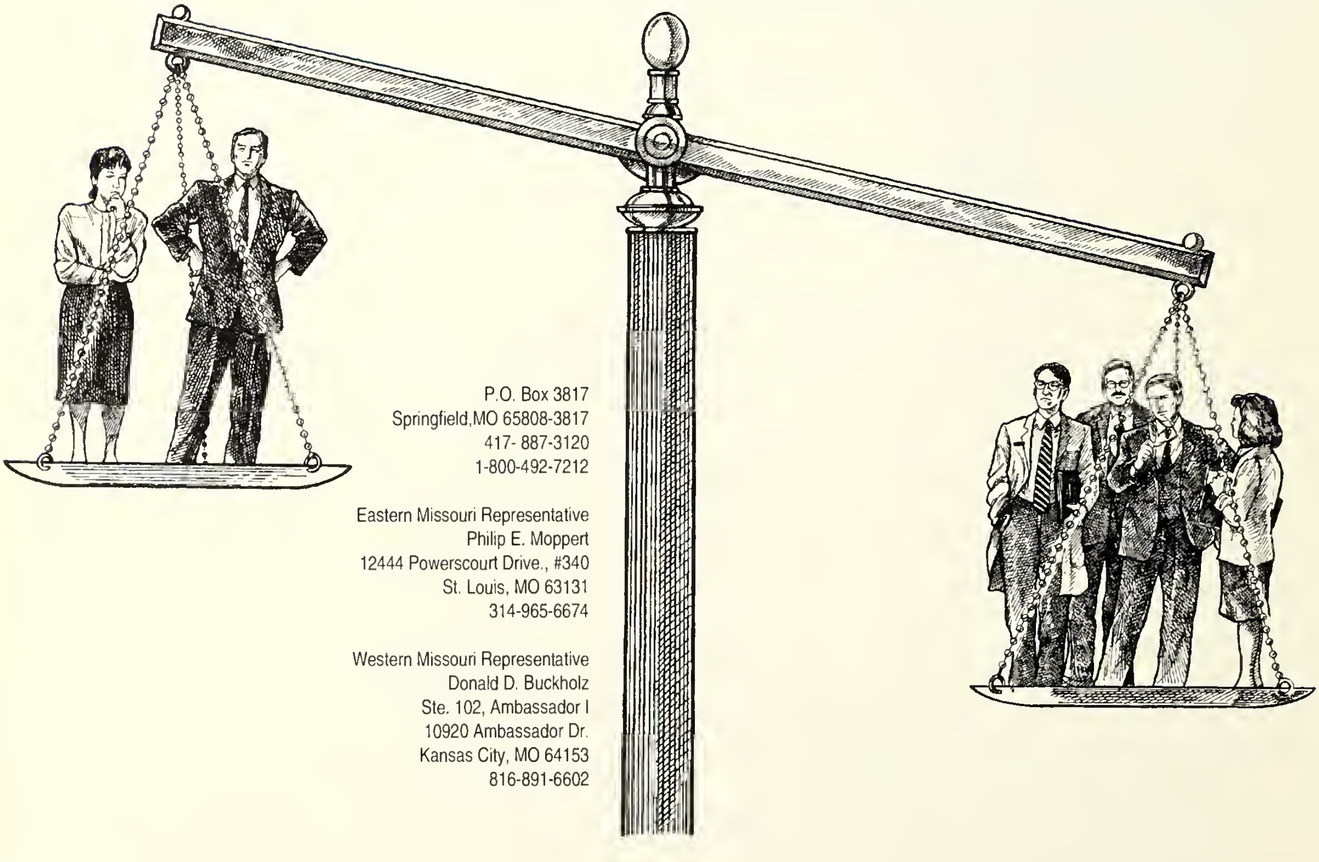

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FEBRUARY'S COVER:

"Monterey Forest"
Watercolor

John Wm. Fries, MD, is currently a volunteer physician at St. Louis Regional Hospital in the emergency radiology department. The painting is on an oriental masa paper. He used a technique in which the paper is moistened and krinkled in certain areas. The paint stains the wrinkled areas creating an unusual effect. Fred Wong, a New York artist of Chinese ancestry taught Dr. Fries this technique at the Student Art League in New York City.

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THOMAS P. DOYLE, M.D.

HOME: St. Louis, Missouri

AGE: 36.

SPECIALTY: Orthopedic Surgery.

MEDICAL COLLEGE: University of Missouri, 1978

PRACTICE: "I recently purchased an established but declining sole practitioner office from a retiring physician. It's a risk, but they say that great deeds are usually wrought at great risk."

HOBBIES: Horseback riding and golf. "If I combined activities, would it be polo?"

LAST BOOK READ: Missouri: Images of Nature, photographed by Charles Gurche.

LATEST ACCOMPLISHMENT: "Testing a protective knee pad I'm developing for use by football players."

PROFILE: Independent and open-minded. "Living in the country, I don't feel hampered by social convention. I can work on new ways of doing things."

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The New Demographics

J. Regan Thomas, MD, Editor

No one can deny that significant changes in American medicine are eminent. Speculation may vary from individuals and organizations, but certainly trends can be discerned. These changes to some degree are a response to global and economic factors beyond medicine. Medicine, like most institutions however, will feel the impact of a nation which finds itself very different than it was even a decade ago. The difficulties ahead for medicine are real and must be confronted in a realistic fashion. They cannot be wished away.

A recent report by the Association of Governing Boards (a group representing trustees of public and private colleges and universities) in observing these trends noted five key components:

1. Economic pressure, both domestic and international will continue to grow in the next generation.
2. Scientific advances in the next generation will dwarf the changes of the last 25 years.
3. The nation's crisis of values and ethics will continue to deepen.
4. Demographic change will continue to remake the face of the nation.
5. Racial and cultural tension will continue to mount as the pressures of diversity continue.

If one looks into just one of these propositions, the difficulties are sobering. Changing demographics will have a dramatic influence on medicine. Medicine's degree of success in dealing with this new diversity will, to a great extent, determine how unscathed it will emerge as an institution through the next generation. Consider that in the next twenty years the U.S. will add 4.4 million minority youth (Latino, African-American, Native American, and Middle Eastern), while during the same period the number of white youth will drop by 3.8 million. Will the "face of medicine" change to reflect the changes of the "faces of the nation"? How will the social and cultural changes related to these demographics affect the way health care is delivered and medicine practiced?

Gender related demographics are already in a period of significant numerical alteration. For example, the number of women in medical school has steadily increased with the University of Missouri following the national trend. This year women made up 41.6% of the new entrants to medical schools with Missouri entering 40.4% to its first year class. In fact, in 1990 women made up 51% of the entering class at Ol' Mizzou. The generation which includes these young women physicians will be in the mainstream of medical practice (and medical economics) soon. Speculation may again vary as to how this demographic change in gender representation will affect medicine, but few would suggest that it will be identical to the profession of even a decade ago.

Medicine, like all other components of our society, will find these new demographics part of its destiny. Its ability to effectively respond will govern how much of its own destiny it will have determined. The growing diversity in this country and the possibility of increased racial and ethnic tension must be addressed in many ways including genuine efforts to increase minority enrollments to medical school for example.

There are of course no simple answers for these challenges, the new demographics included. Too often, society seeks simple answers to inherently complex questions. Medicine like all institutions must do its best to be cognizant of the evolution of time and change surrounding it. At times it must take risks. The alternative is a profession "...adrift from crisis to crisis."

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Health System Reform

Carol Williams, MD, President,
Missouri State Medical Association

Health system reform was a high priority agenda item in recent national and state elections and continues to be in the forefront of efforts to make health care available to every citizen. The difficulty some segments of the population have in obtaining medical care is well known. Growing numbers of Americans are without health insurance, and the ability of the average person to pay out-of-pocket for costly medical procedures is diminishing. Cost of care continues to rise faster than general inflation, making health care even less available to many in our country. Our delivery system is serving some very well but failing many others.

Proposals for reforming our complex health care system are emerging from the political arena physicians' and other health care providers' organizations, the insurance industry, business, and labor, all agree that there is a problem in the delivery of health care, but perceptions about what should be included in basic benefits vary widely. The AMA, in its Health Access America, for instance, proposes insurance coverage only for financially threatening and low probability occurrences and leaves ordinary and routine services to be funded by the patient, Blue Cross/Blue Shield includes both primary and preventive care, American Hospital Association includes basic and vital services, preventive, acute and long-term care in its proposal. American Nurses Association proposes coverage for primary, preventive, acute, pharmaceutical, and long-term care. So there are some groups that are placing emphasis on preventive and early diagnostic services which are likely to lower more expensive long-term health care costs, while there are others which are focused on after-the-fact, acute care and care after the acute crisis has subsided, where costs are high and continue to rise.

In most proposals except the AMA's and Blue Cross/Blue Shields's access is universal. AMA excludes part-time and seasonal workers and non-workers above the poverty level. Blue Cross/Blue Shield excludes Medicaid and Medicare patients as well as those who are not poor. Governor Mel Carnahan of Missouri has charged the Commission on State Health Insurance with developing a comprehensive state health care program which will guarantee availability, eliminate exclusions based on pre-existing conditions, guarantee renewability of health insurance policies despite severe health problems, and guarantee coverage when jobs are lost or change.

Most of the proposals put forth to date envision financing reforms through public-private partnerships and Medicaid-Medicare reform. Some advocate employer tax credits, sin taxes, payroll and income tax increases to pay for reform.

All the plans see a need for cost containment. A prime element in virtually all of the proposals is tort reform, Global budgets and expenditure targets are key elements in President Clinton's reform proposal. Reduction in administrative costs through uniform billing and elimination of unnecessary bureaucratic controls is mentioned as a goal. Several of the plans encourage greater use of managed care to control costs. Practice parameters and outcomes research would be widely used in some plans.

In the coming months issues which will have to be resolved to bring about a workable and equitable reform of the health care system in a cost effective manner will be:

1) Does the entire system need overhaul or only certain segments?
2) Will basic benefits be defined as not only acute and long-term care but also preventive and "maintenance" care?
3) Will access be guaranteed for the entire population or only for segments?
4) How will the financial burden be distributed?
5) How can cost containment efforts be implemented without negatively impacting the delivery of quality medical care?

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AIR FORCE

Continued from page 61

6) If compromise becomes necessary, in what spheres is compromise least likely to hamstring the system?

Both nationally and at the state and local levels, many players are involved in seeking solutions to problems in the health system. Out of this diversity consensus is beginning to emerge on some issues. By laying aside old turf wars and focusing on what will be best for the health of the nation, the participants in reform efforts should be able to develop a plan which ensures adequate access to quality medical care for all Americans.

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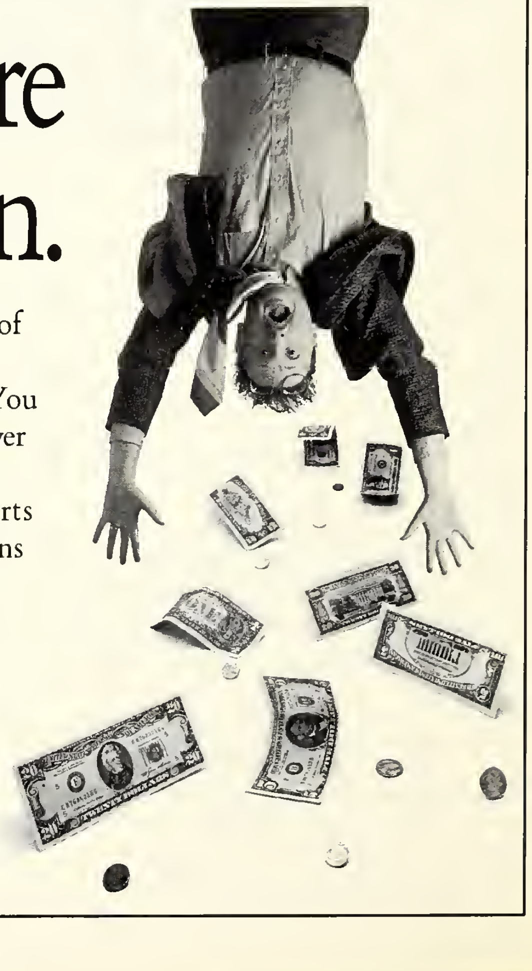

MEDICARE CLARIFICATION

According to the latest sources at Medicare, physicians can charge for an initial consultation for pre-operative clearance of an established patient if the consultation is for a new diagnosis. For example, your patient is diagnosed by his urologist as having bladder cancer. If the surgeon who will be performing bladder surgery sends the patient to you, his family physician, for pre-operative clearance and you have never rendered medical services for the patient's bladder cancer, then you can charge the patient for an initial consultation.

Dear Dr. Woerth,

I understand that Medicare has changed its reimbursement for multiple endoscopic procedures done on the same day. Can you explain what this means and how it will effect my reimbursement for these procedures?

Dr. S. S.

Dear Dr. S.S.,

Medicare continues to refine its guidelines for the allowable (i.e. the amount that Medicare will pay) for multiple services. Medicare has determined that some endoscopies are related because they have the same base definition and payment for related procedures should be reduced. For example, all codes 43235-43258 (found on pages 242-243 in the 1992 CPT) have in common this base definition "upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate." Thus, the complete definition of 43247 includes the base definition "upper gastrointestinal endoscopy including esophagus, stomach and either the duodenum and/or the jejunum as appropriate" plus "for removal of foreign body." The indentation of codes indicates that the definition of the code is not complete and one must refer back to the nearest code that is not indented to obtain the base definition. So, when billing for endoscopies using indented codes, if the codes have the same base definition, Medicare considers these related procedures.

Now the rule for Medicare's allowable for related endoscopies is as follows. When two endoscopies that have the same base definition are performed, the endoscopy with the highest value is paid at the full allowable rate and for the second related endoscopy the allowable is the difference between the allowable for the endoscopy minus the allowable for the base endoscopy. (I know this sounds complicated, so follow the example listed below.)

A patient has the following series of endoscopies 43247, 43251 and 45310. In this series, the first two endoscopies are related, each having the same base definition. The third endoscopy, code 45310, is unrelated to the other endoscopies. The Medicare fee schedule lists the allowable for the endoscopies as follows:

43235	$213.49
43247	$288.92
43251	$317.04
45310	$109.30

Now let's apply Medicare's new multiple endoscopy guidelines. The most expensive endoscopy is listed first and allowed at full price.

43251	$317.04

The second related endoscopy is reimbursed as follows:

43247	$288.92	minus the allowable for the base endoscopy
43235	-$213.49	to arrive at a new allowable of
	$75.43	for 43247

Now in order to bill for all three of the endoscopies, the multiple surgery guidelines must be applied. (Endoscopies are considered surgery because they are listed in the Surgery Section of the CPT book.) The most expensive procedure is listed first and paid at 100% of the Medicare allowable, the second most expensive procedure is listed second and paid at 50% of the Medicare allowable and the third most expensive procedure is listed third and paid at 25% of the Medicare allowable. Thus, the allowable for these three endoscopies would be as follows:

43251	$317.04	
45310-51	$54.65	(50% of $109.30)
43247-51	$18.86	(25% of $75.43)
Total	$390.55	allowed by Medicare

Please note that the above is the allowable for the three endoscopies. The correct billing of the three endoscopies is as follows:

43251	$317.04
43247-51	$288.92
45310-51	$190.30

Continued on page 64

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References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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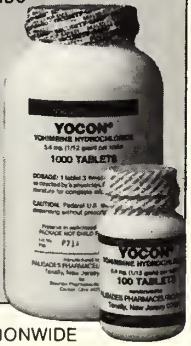

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Medicare's computer will make all the necessary adjustment in the allowable. Thus you can continue to list the most expensive procedure first, the second most expensive procedure second, etc.

Just remember, when you check the Explanation of Medicare Benefit (EOMB), the endoscopy codes may be listed in a different order than you billed them and that reductions in reimbursement may be the result of having done related endoscopies.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, PhD
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Although your name will not be used in *Missouri Medicine*, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Electronic Claims Filing

The new payment terms of the 1993 Medicare participating provider agreement make it necessary for physicians to explore filing claims electronically. Previously, participating physicians were paid before non-participating physicians. In 1993 electronic filers will be paid after 14 days and paper filers after 27 days regardless of the physician's participation status. If you are interested in filing your Medicare claims electronically contact your electronic media claims (EMC) representative:

General American Medicare Part B -
Kelly Triska - 314-525-5516

Blue Cross Blue Shield of Kansas Medicare Part B -
Brenda Bisel - 913-291-7130

The cost for electronic claims submission (ECS) to General American Medicare Part B using their Med-Express software package is $50 per year. BCBS of KS Medicare Part B provides their PICS for $36 per year. Both will provide you with a toll free number to use when submitting claims. BCBS of Kansas will even accept all Blue Cross of Kansas and of Kansas City - private side -claims free of charge.

Electronic claim submission (ECS) is estimated to save providers about two dollars per claim. Conservatively, it easily saves the fifty cents which most clearinghouses charge per claim. This fifty cents cost for paper claims is comprised primarily of the employee's time to input, print, mail, file a copy and post the amount paid on the claim. If a clerk is being paid five dollars an hour, then it only takes six minutes per claim to save this fifty cents. The employee's time could then be redirected to reviewing explanation of benefits - a process which can produce additional revenue as a result of submitting appeals for underpaid claims. Costs other than employee time include printer, forms, mailing, the additional time required for the payment of a paper claim, and the larger rejection rate for paper claims resulting in multiple submissions.

While the current emphasis is on being paid sooner for ECS, other benefits are worth noting. Medicare now has electronic funds transfer available for those filing over 90% of their claims electronically. Electronic remittance notices are available. Automatic posting to the patient's account is also available depending on your software vendor. Later this year, General American is planning to implement a bulletin board which can be used for policy updates as well as two-way electronic mail.

Clearinghouses offer a convenient way to file all claims electronically through one transmission. The clearinghouse will then pass along all the electronic claims they can and print paper claims for those which they cannot. The methods of charging for clearinghouse services varies. One common method of charging providers is a flat monthly rate. Other methods of charging for their services include a per claim fee and a per claim edit fee. One clearinghouse which uses the per claim edit fee will then charge an additional fee for forwarding those claims which cleared the edits. When contracting with a clearinghouse it is important to know how your charges will be calculated. Listed below are clearinghouses which Missouri providers may want to consider because they submit to Medicaid, Medicare or both. MSMA does not claim that this is a complete list, names and phone numbers are being provided for your convenience and should not be construed to be an endorsement.

American Medical Finance	314-576-7898
CIS Technologies	214-630-5932
CyData	319-557-2993
Data Medic Claims	617-740-2714
Envoy	800-366-5716
ETS	404-688-8411
GTE Health Systems	800-669-1156
Healthcare Interchange	314-995-6047
MediQuest	800-874-1991
Office Mate	708-830-3880
Office Tech	314-842-2726
Ordernet	513-474-3953
Physicians Practice Management	800-428-3515
United Health Care	800-535-9291

After you have heard the sales pitch from clearinghouses which interest you, consider asking for names of physicians in your specialty who are using the clearinghouses in order to contact them for their experience.

Last year MSMA published a resource handbook consisting primarily of considerations for physicians purchasing computer software, hardware, and filing claims electronically. If you are interested in this publication send your request to the MSMA Department of Health Care Finance; Box 1028; Jefferson City, MO 65102.

Note: Medical Economics is prepared by Patrick J. Mills, MBA, CPA. Mr. Mills is the Director of Health Care Finance for MSMA. These reports relate to changes in government regulations, insurance coverage, and other topics that may directly or indirectly impact upon a physician's economic situation.

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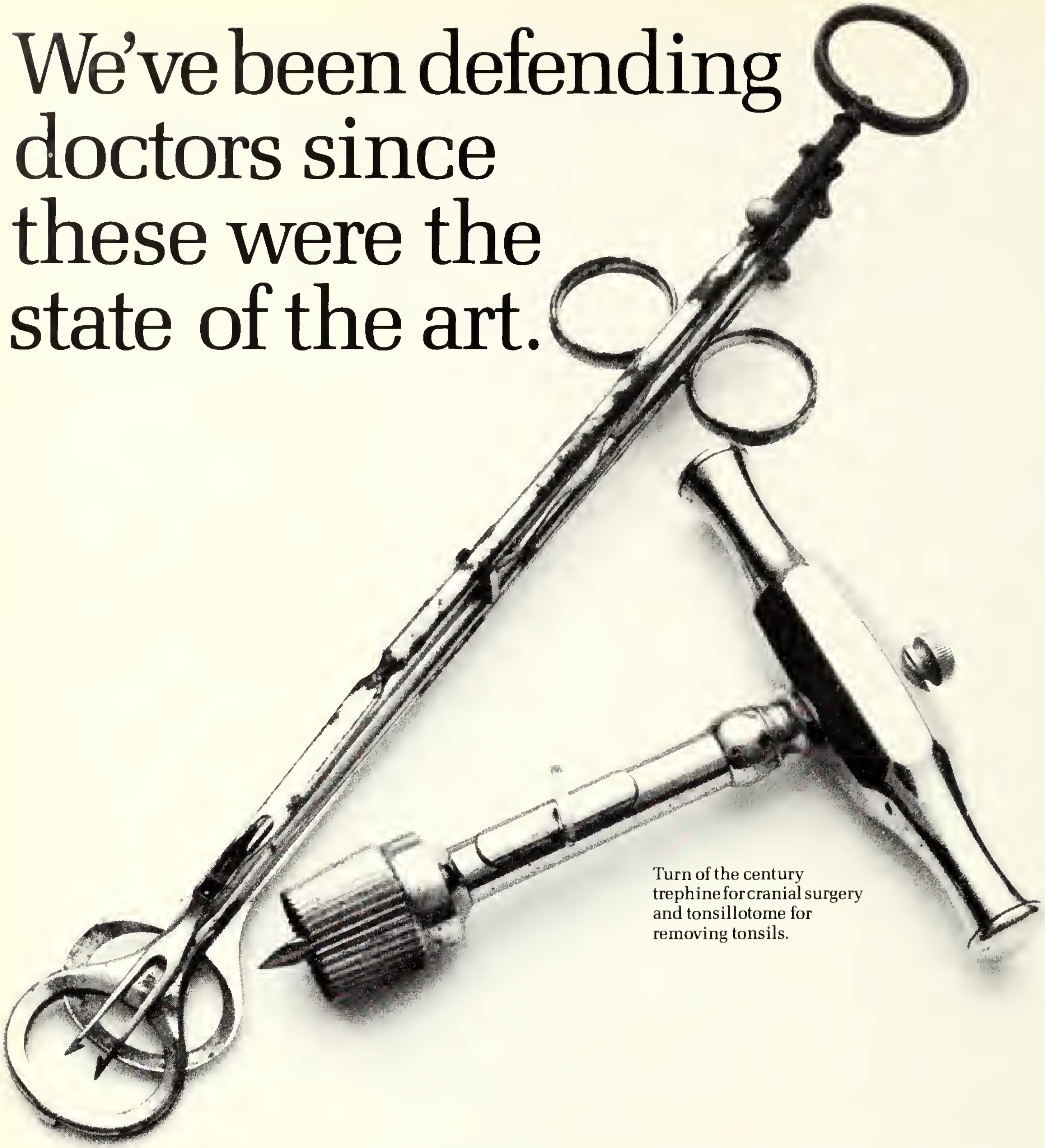

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DIABETES IN MISSOURI: Prevalence and High-Risk Populations

A. Neal Sprick, AB, Patrick O. Akinbola, PhD, Robert A. Hagan, MS, Ross C. Brownson, PhD

Diabetes was reported as an underlying or contributory cause of 3,706 deaths among Missouri residents in 1991, and the estimated direct and indirect costs of the disease in the state exceeded $450 million. Behavioral Risk Factor Surveillance System data indicate that, although diabetes is prevalent throughout the state's population, it is more prevalent among females, elderly persons, minority races, and persons with low educational and income levels. Individual practitioners should emphasize the reduction of health risk factors among their diabetic patients. Through regular monitoring of risks for diabetic complications and early intervention, a significant number of diabetic complications can be prevented or delayed.

One of the most prevalent chronic conditions in the United States and Missouri, diabetes imposes a major burden of preventable illness, premature mortality, and excessive financial costs. The Centers for Disease Control and Prevention (CDC) has estimated that more than 300,000 Missourians have diabetes, although only about half are diagnosed.[1] Diabetes was the seventh leading cause of death in Missouri in 1991, being reported as the underlying cause for 1,106 resident deaths and as a contributing cause for another 2,600 deaths.[2] Estimates suggest that more than 62,000 hospitalizations in Missouri each year are due to diabetes and that the financial cost of diabetes in the state is about $450 million in direct (medical care) and indirect (lost productivity) costs.[1]

Cardiovascular disease is the most frequent cause of death for diabetic persons, as it is for the rest of the population; however, the annual risk for death from cardiovascular disease is two to three times greater for persons with diabetes. The presence of diabetes increases the risk of cerebrovascular disease and coronary artery disease by two to three times and the risk of peripheral vascular disease by five times.[3]

Each year in Missouri, an estimated 1,000 lower-extremity amputations are performed because of diabetes, and about 315 new cases of diabetes-related blindness and 165 cases of diabetic end-stage renal disease occur.[1] Besides the public and private financial burden that results from these problems, the disabilities and restrictions to lifestyle that accompany diabetes can greatly reduce the quality of life for diabetic persons and their families. The prevalence of diabetes and of risk factors that contribute to the complications of diabetes are thus of great concern to the state's public health community. This report uses self-reported data to characterize the diabetic population of Missouri.

METHODS

Since 1988, the Missouri Department of Health has conducted Behavioral Risk Factor Surveillance System (BRFSS) interviews that include questions about diabetes and risk factors that contribute to diabetic complications. These monthly interviews use a random-digit-dialing technique[4] to obtain telephone interviews from Missouri residents over the age of 18 years. We examined data from 5,898 interviews conducted in the years 1988 through 1991. The number of annual interviews ranged from 1,365 in 1988 to 1,512 in 1991.

RESULTS

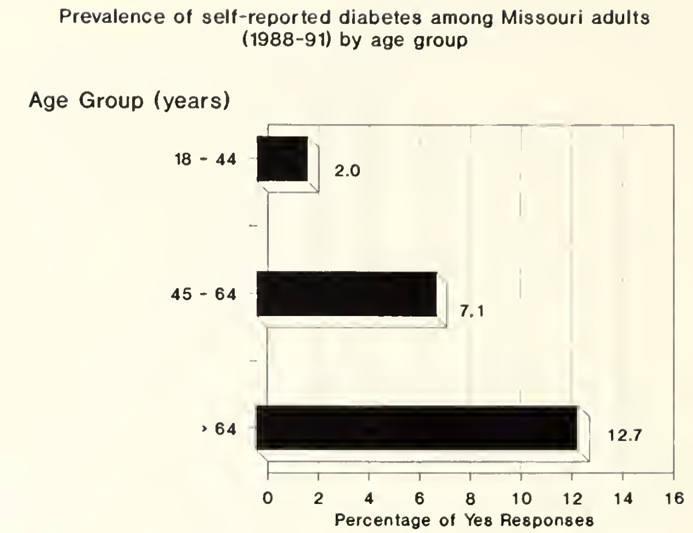
In the 5,898 interviews, 323 (5.5%) respondents said that they had been told by a doctor that they had diabetes. Eighteen respondents did not answer the question. In a review of 1988 and 1989 BRFSS data from 38 states and the District of Columbia, CDC reported 5.1% prevalence of self-reported diabetes.[5] BRFSS does not distinguish between insulin-dependent and non-insulin-dependent diabetes, but 90 to 95% of the cases of diabetes in the United States are non-insulin-dependent.[6] Diabetes prevalence is known to increase with age.[6] Figure 1 compares the percentages of diabetic respondents in three age groupings. In Missouri, the 322 diabetic respondents who gave their ages had a median age of 64 years, while 5,530 nondiabetic respondents had a median age of 41 years. Among the diabetic respondents, 49% were age 65 and older; 20% of the nondiabetic respondents were in this older age group.

Figure 2 compares the percentage of diabetic respondents among those who reported their race as white or black. Members of the black population throughout the United States are 60% more likely to have diagnosed diabetes than members of the white population.[1] The percentage of black diabetic respondents in Missouri's BRFSS was 50% higher than the percentage of white respondents. In 1990, the rate of diabetes deaths was more than twice as high among blacks (26.2 per 100,000) as among the state's overall population (11.2 per 100,000).[2]

Although 60% of the respondents to Missouri's BRFSS were women -- an over-representation, since 1990 state census data indicates that they compose 52% of Missouri's population -- they accounted for 67.8% of the diabetic population interviewed. In the 1979-1981 National Health Interview, females accounted for 56.7% of the diabetic population interviewed.[7]

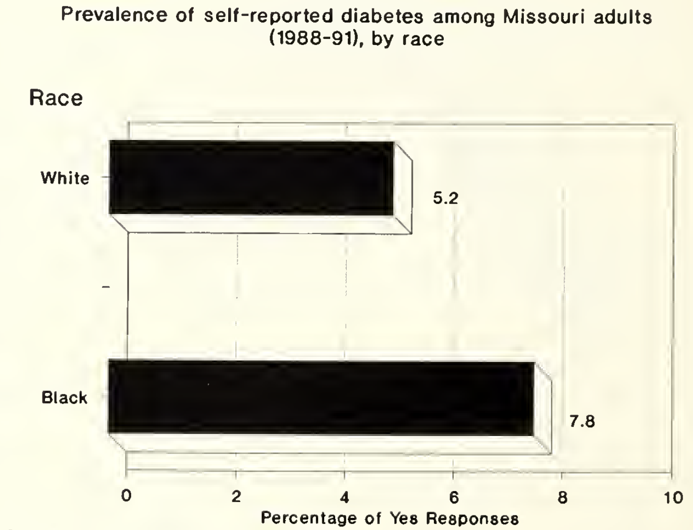
In Missouri's BRFSS, diabetes prevalence decreased slightly with increased educational and income levels. Among persons with less than a ninth grade education, 6.2% reported that they had been told they have diabetes, compared to 5.5% among persons with a ninth to twelfth grade education, and 5.2% for those who had been educated beyond the twelfth grade. Figure 3 compares the percentages of diabetic respondents according to self-reported annual incomes.

Although the BRFSS data indicated no major differences in the distribution of diabetic respondents by geographical area, the 7.1% for the city of St. Louis was substantially greater than the 5.5% for the state as a whole. St. Louis County, on the other hand, had a percentage of 4.0%. Jackson County, which includes Kansas City, had a 6.2% rate of diabetic respondents. The collective rate of diabetic respondents for five suburban counties that immediately surround St. Louis and Kansas City was 3.9%.



Source: BRFSS 1988-91; n=5852

Figure 1: Prevalence of self-reported diabetes among Missouri adults (1988-91), by age group.



Source: BRFSS 1988-91; n=5780

Figure 2: Prevalence of self-reported diabetes among Missouri adults (1988-91), by race.

DISCUSSION

As Missouri's population ages, the prevalence of diabetes and diabetic complications will almost certainly increase. Efforts to control diabetes take place on three levels. The primary level is the prevention of diabetes, the secondary is control of metabolic changes, and the tertiary focuses on reducing risks for diabetic complications.[8] The principal weapon to prevent excessive morbidity and mortality due to diabetes currently is to eliminate or reduce certain health risk

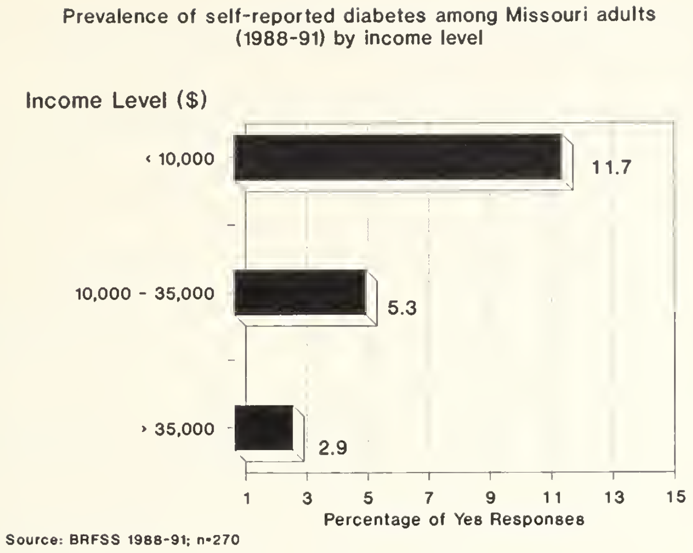


Figure 3: Prevalence of self-reported diabetes among Missouri adults (1988-91), by income level.

factors in the diabetic population. The American Diabetes Association maintains that half of all non-insulin-dependent diabetes cases and at least half of most major complications of diabetes could be prevented by appropriate education and intervention programs that can help diabetic persons control obesity, reduce cholesterol levels, increase physical activity, stop smoking, and improve control of their blood-glucose levels.[6] Early systematic application of currently available clinical measures to prevent, detect, and treat diabetic complications may reduce the incidence or severity of those complications.[3] To help public health programs target and implement these early measures against unnecessary illness and death, surveillance systems like the BRFSS can reveal important sociodemographic characteristics of persons with diabetes and can indicate what their other health risks are.

We found higher percentages of diabetic respondents among the older age groups, among females, and among black respondents. Respondents with less than nine years of formal education and those with incomes of less than $10,000 a year were more likely to report having diabetes. Lower percentages of diabetic respondents were found in rapidly growing suburban counties with younger and more affluent populations, and percentages were higher in areas with declining populations and higher concentrations of elderly persons, such as the city of St. Louis and many of the rural counties.

As with all data sources, Missouri's BRFSS data has limitations. Most significantly, the BRFSS collects information only from persons who have telephones and only from those willing to take the time to answer the questions. The information obtained about health conditions is self-reported and is not based on objective clinical observation or testing. Also, the sample size for BRFSS is not large enough to permit analysis of relatively small population segments, such as individual counties, small cities, and minority populations other than blacks.

In spite of these limitations, information from BRFSS data can be useful in assessing practices related to health risk reduction among a large and fairly representative share of Missouri's adult population. Information from BRFSS data, along with mortality and hospital data, can form the basis for a statewide chronic disease surveillance system. That system would enable health care policy makers and providers to direct resources more efficiently and effectively to specific problems that contribute to excessive diabetes morbidity and mortality.

Ultimately, individual practitioners must emphasize the reduction of health risk factors in their own practices and with their diabetic patients. Through regular monitoring of risks for diabetic complications and early intervention, a significant number of diabetic complications can be prevented and delayed. Such monitoring should include annual ophthalmic examinations to detect retinopathy, examinations of the feet during each patient visit, and regularly scheduled evaluations for cardiovascular risk factors. To assist practitioners in this effort, the Missouri Department of Health is distributing *The Prevention and Treatment of Complications of Diabetes: A Guide for Primary Care Practitioners*,* which was developed by CDC to help in the day-to-day management of patients with diabetes and to help practitioners prevent, detect, and treat the major complications of diabetes.

* Physicians and other health care professionals can obtain the guide by writing or calling the Missouri Diabetes Control Program at the following address:

Missouri Department of Health
Division of Chronic Disease Prevention
and Health Promotion
201 Business Loop 70 West
Columbia, Missouri 65203 (314) 876-3265.

Diabetes Case Reports from the Field

Kevin Blinder, MD, Director of Retina Vitreous Service at the Mason Eye Institute of the University of Missouri Hospital and Clinics provides the following two case reports of youth-onset diabetics demonstrating the extremes of compliance and visual prognosis.

CASE 1: The first patient originally presented to the eye clinic in 1980 for a routine eye examination. At the time he was 17 years old with a 12 year history of insulin dependent diabetes mellitus. Throughout his diabetic history he had a difficult time adhering to any type of meal plan, with marked fluctuations in his blood sugars. His latest Hemoglobin A1c was about 14% (normal 5-6%). Ocular examination that day revealed a visual acuity of 20/20-2 OU. Dilated funduscopic examination revealed early background diabetic retinopathy in the left eye only. Patient was asked to return for follow-up in one year's duration. Six years later he returned to the eye clinic complaining of decreased vision out of the right eye. Vision at that time was about 20/25 OU. Dilated funduscopic examination revealed evidence of proliferative diabetic retinopathy (PDR) in each eye. Panretinal photocoagulation was begun that day in the right eye, and the patient was instructed to return for initiation of treatment in the left eye in one week's duration. The patient failed to return for appropriate follow-up and treatment. Five years later visual acuity was 20/80 OD, and 20/30 OS. Fundus examination revealed a tractional retinal detachment in the right eye extending into the fovea. The left eye revealed progressive tractional changes with active PDR. Surgery was recommended first on the right eye, then the left. Patient has not returned for further follow-up at this point.

CASE 2: The second patient presented to the eye clinic in 1983 as part of the protocol for the Diabetes Control and Complications Trial, a national investigation of diabetic control in insulin dependent diabetes. At the time she was 27 years old with 14 year history of diabetes. She admitted to a past history of very good control with strict adherence to diet. Patient underwent annual ophthalmologic examinations. In 1985 proliferative changes were discovered in the right eye and panretinal photocoagulation was initiated. The patient did well, with very good compliance and follow-up. In 1991 she developed proliferative changes in the left eye with subsequent laser photocoagulation. On the latest follow-up in 1992, visual acuity was 20/20 OD, and 20/25 OS. Funduscopic examination revealed regression of the neovascularization with laser scars OU.

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Acknowlegment: The authors are grateful to Dr. Jeannette Jackson-Thompson and Ms. Joan Wilkerson of the Bureau of Smoking, Tobacco, and Cancer, which manages the BRFSS data for the Missouri Department of Health; to the supervisors and surveyors from Manpower, Inc., who conducted data collection; and to staff members of the National Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control and Prevention, who reviewed the manuscript. The study was supported in part by Centers for Disease Control contract no. U58/CCU700950 and cooperative agreement no. U32/CCU704929.

The Authors

Patrick O. Akinbola, PhD, Robert A. Hagan, MS, Ross C. Brownson, PhD, Division of Chronic Disease Prevention and Health Promotion Missouri Department of Health, 201 Business Loop 70 West, Columbia, MO 65203; Tel. (314) 876-3200; FAX (314) 443-3592. A. Neal Sprick, AB, is with both the Division of CDPHP and the Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA.

Reprint requests to:
Missouri Diabetes Control Program
Missouri Department of Health
201 Business Loop 70 West
Columbia, MO 65203
Tel. (314) 876-3265

Missouri's two "Anti-Hassle" Committees discuss Medicare/Part-B Carriers' policies

Missouri's two "Anti-Hassle Medicare Committees both met in December. At both meetings, the representatives reviewed existing Medicare policies and developed guidelines for future meetings. Complete minutes of the meetings are available by contacting the advisory committees or by contacting either General American or Blue Cross Blue Shield offices.

Notes from the General American meeting were provided by Dr. Huffaker. His comments, edited for space, follow.

GENERAL AMERICAN/MEDICARE PART- B CARRIER ADVISORY MEETING

The payment policy for multiple endoscopic procedures was discussed. The committee strongly recommended to HCFA that they review their current policy. The representatives agreed that when different scopes are used through different orifices during the same office visit that each procedure should be reimbursed in full.

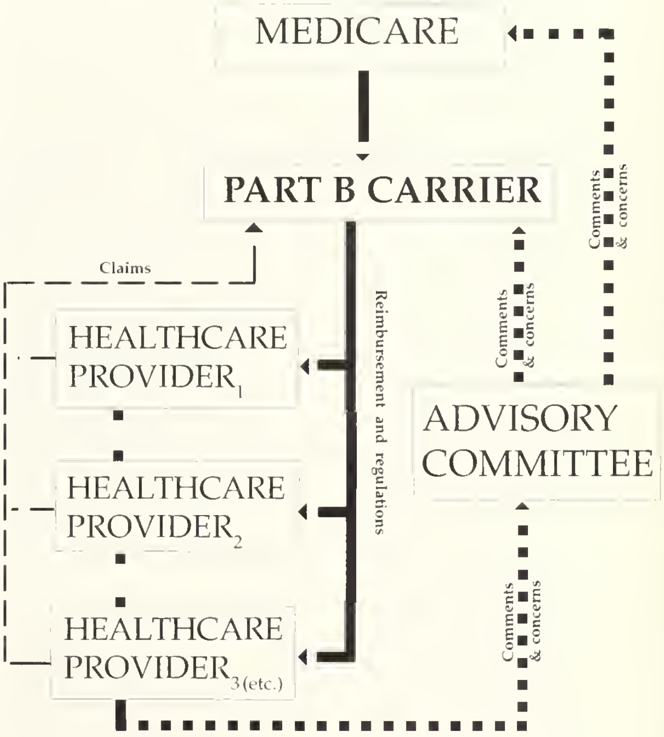
The committee discussed HCFA's policy on preoperative medical evaluation and clearance. Present policy is that a request from a surgeon to the patient's primary care physician for the purpose of clearing the patient for surgery counts as a referral and not a consultation. If the primary care physician or anyone in his/her group has seen the patient within three years, it is to be coded as an established visit. The committee urged adoption of the definition for consultation given in the CPT book, "A consultation is a type of service provided by a physician whose opinion or advice regarding evaluation and/or management of a specific problem is requested by another physician or other appropriate source."

Notification of physicians by the carrier of policy changes continues to be a problem. American General is developing a manual that should be ready by summer. Updated indexes will come annually. Storing this infor-

Continued on page 74

Regional carrier advisory committees were formed in 1992 to provide physicians and others a way to participate in the development of local medical review policies, to create a mechanism for calling attention to administrative problems and suggest resolutions, and to encourage the exchange of information between physicians and Medicare. The sizeable number of representatives on Missouri's two committees, which includes a cross section of the state's healthcare professions, related businesses and government agencies, General American and Blue Cross Blue Shield (Part-B carriers for Missouri) ensures that these groups are diversified and well-balanced.

General American's committee is cochaired by Dr. Frank Mohs and Dr. William Huffaker. Blue Cross Blue Shield's committee is chaired by Dr. Joseph Leiker. As yet, they have not selected a co-chair.



Anti-Hassle Committees
continued from page 73

mation on a PC computer diskette and setting up an electronic bulletin board to disseminate information also is being investigated.

Carl Messina, General American's Medicare Part B executive director, discussed electronic claims and payment floors. The payment floor for electronic claims remains at 14 days. Paper claims increase to 27 days. Interest will be paid on the 18th day after receipt of a clean claim. Non-participating physicians and institutional providers receive interest after the 27th day. HCFA and General America are promoting electronic claims submissions and Medicare participation though these mechanisms.

The "Explanation of Medicare Benefits" letter terminology changed January 1st. In the past letters to patients have used the term "medically unnecessary" when the term "uncovered" would have been more appropriate.

At future meetings, the committee hopes to have the opportunity to review proposed changes in Medicare rules, such as global surgery and CLIA '88 regulations. And, while the committee cannot deal with individual reimbursement issues, physicians are urged to bring generic issues and problems to the committee's attention.

BLUE CROSS BLUE SHIELD/ MEDICARE PART - B CARRIER ADVISORY MEETING

The "anti-hassle" committee that is monitoring Blue Cross Blue Shield of Kansas, Missouri's other Part-B carrier, also met in December. This group represents physicians and other healthcare professionals situated in northwest Missouri and Kansas. Minutes from their meeting were forwarded to **Missouri Medicine** from the Blue Cross Blue Shield office in Topeka.

This committee also is concentrating on organizational procedures and is developing appropriate ways to advise their local carrier on policy matters. This was the group's first meeting.

Drafts of policy statements will continue to be published by the carrier in their newsletter, *Communique,* to ensure that the carrier meets HCFA regulations for implementing policy.

Payout information for 1991 and 1992 was distributed. In Kansas and northwestern Missouri, the carrier has paid $24 million more during January through September 1992 than for the same period in 1991. The average payout per claim dropped from $59.05 in 1991 to $58.83 in 1992. Numbers of claims processed increased by about 500,000 from 1991 to 1992. Gross payout is increasing, although the payout per claim has declined.

The northwest Missouri/Kansas committee will meet again at 2 pm in Lawrence, Kansas on March 3, 1993.

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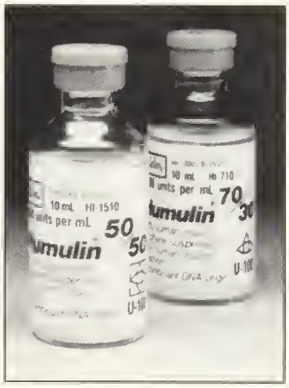

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National Health Insurance

by Stephen M. Soltys,MD

Senator Edward Kennedy (D-MA) has long warned of the health care crisis we face:[1,2]

1) 37 million Americans have no insurance coverage, public or private, and in the 1980s the number grew by 1 million a year.

2) 60 million more Americans are seriously under-insured and a single catastrophic illness would deplete their finances.

3) An estimated 15 million people annually report that they either do not seek health care or are denied care because of an inability to pay.

4) 2.5 million families per year incur medical bills in excess of $3,000 with no means to pay them.

The question is not "Do we have a health care crisis?" Rather the question is, "What is the best way to reform our current system of health care?"

David Nexon, Health Staff Director for the Senate Labor and Human Research Committee, points out[3] that shifts in the economy that have been associated with a decline in heavy manufacturing and a growth in the service, retail sales, and small business sector have accounted for most of the increase in the number of non-insured. Large industries were heavily unionized and good health care plans were a key part of the union benefit packages. Jobs in service, sales, and small business tend to have poor or non-existent health insurance benefits and thus people working in these areas make up a steadily expanding portion of the working non-insured. Recessions, such as the one this election year, encourage this trend.

Employees who are changing jobs must make sure that health benefits are offered by the new employer. The time between leaving one position to start a new one is a window of vulnerability during which a family may be non-insured. If a family member has a preexisting medical condition, the insured worker may be unable to change jobs because many policies will not cover the relative's preexisting condition. Those with costly illnesses may have to pay higher insurance premiums or may be dropped from coverage completely. As costs for group insurance skyrocket, many businesses simply drop employee coverage altogether.[4]

With the enactment of Medicare for the elderly and Medicaid for the poor in 1965, it was assumed that Americans could count on nearly universal access to health care because most workers would have health insurance benefits, and these new programs would cover those who were not working. In reality, millions of workers were non-insured or under-insured. (Under-insurance is defined as discontinuous coverage, limitations in coverage that require large out-of-pocket payments, and inadequate or nonexistent catastrophic health insurance).

Further gaps in coverage occurred when physicians refused to see Medicare or Medicaid patients because the government reimbursement rate was not high enough to cover costs and a normal profit. Medicare deductibles and co-payment rates have now increased to the point that many elderly citizens consider it necessary to purchase expensive "Medigap" insurance from private companies. Finally, Medicare does not provide adequate benefits for services such as long term care for the elderly or chronically ill.[5]

By 1990, 73% of Americans favored some type of national health insurance (NHI) program, compared with about 40% in 1952. However, only 14% thought it was one of the top two problems affecting the country. There is ambivalence about what to do about the issue, with the public divided about how to fund such a program: 46% favor a universal public health plan, while 33% favor a mixed private-public plan. Another issue is the tax burden the public will bear: 72% say they would be willing to have to pay increased taxes, but only 22% were willing to pay more than $200 per year.[6]

After a period of 12 years in which there was relatively little attention paid to the topic of NHI, the 1992 presidential campaign once again focused on the needs of the medically indigent. The three leading candidates offered their suggestions for restructuring the nation's health care system, and expectations are that 1993 will see the most significant health care reforms since the initiation of the Medicare and Medicaid programs in the 1960s.

The purpose of this paper is to review the history of the NHI debate, outline key components of any NHI proposal, discuss three of the most detailed policy proposals, as well as the Clinton plan, and offer a tentative analysis of these proposals.

Background, Key Concerns, and Key Parties

The idea of NHI has been an issue since Theodore Roosevelt first proposed it in 1912 as a plank in the Bull Moose Party platform.[7] As with any complicated issue, a consensus among the numerous stakeholders is difficult to achieve, and action on any proposal is made more difficult by the potential high cost of a NHI program.

In the 1980s the issue of NHI was abandoned by the presidential hopefuls of both political parties. National health insurance was the type of social spending program with a big price tag that the Republican party under Ronald Reagan was not inclined to support. Although the Democratic party had called for an NHI program during the 1972, 1976, and 1980 presidential campaigns, in 1984 the Democrats drifted toward the center and abandoned the issue, in response to Reagan's popularity. Vicente Navarro, currently with Physicians for a National Health Program, notes that Walter Mondale's 1984 Democratic party platform did not call for NHI.[8] Jesse Jackson, for whom Navarro served as health advisor, was the only presidential candidate that year who called for the establishment of an NHI program. Jackson eventually adopted a proposal modeled on the Canadian system.[9] Navarro says Jackson's health proposal was ignored by the media until after Jackson's victory in the 1988 Michigan primary, which established him as a viable presidential candidate. His NHI proposal was criticized as more than the country could afford.

The 1988 Democratic nominee, Michael Dukakis, outlined his support of a bill that mandated employer-purchased insurance coverage and expanded Medicare and Medicaid. Dukakis effectively used the universal health plan in Massachusetts as a demonstration of his commitment to NHI. However, there were criticisms that the state's program is not universal because many individuals would still not be covered after implementation in 1992, and that it is not comprehensive because it does not address issues such as long-term care for the chronically ill or elderly. The Dukakis and Jackson camps eventually agreed on a compromise at the Democratic National Convention, allowing Jackson to present a modified NHI plan with the support of Dukakis. Although Dukakis was defeated, the issue of NHI was again on the national agenda.

After neglecting health care during much of his administration, President George Bush released his health care proposal in February 1992 in response to the proposals of Democratic presidential candidates.[10] The plan was basically a series of tax deductions and credits, managed care incentives, and health insurance and malpractice reforms. His initial proposal carried a $35 billion a year price tag, to be funded by taxing some employee health benefits and capping growth of Medicare and Medicaid. The funding proposals drew the ire of Democrats and Republicans alike.[11] An NHI proposal was a key element of Governor Bill Clinton's campaign and was more favorably received.

While there was a distinct lack of presidential leadership in the area of NHI during the 1980s and early 1990s, many members of Congress took an active role in formulating health care policy.[12] Many of the current proposals in Congress are the result of extensive discussions with numerous interest groups and are designed to garner a broad base of political support. A variety of public and private commissions also took the lead in developing proposals that received serious attention from legislators trying to achieve a political consensus.

One result of this consensus-building process is that NHI reform has tended to be incremental rather than comprehensive. Another effect has been that groups who in the past have tended to oppose each other are now working together to seek solutions. For example, the American Medical Association's Health Access America plan and the Kennedy-Waxman Basic Health Benefits for All Americans Act, endorsed by organized labor, agree on a number of points. Yet a decade ago the NHI proposals of the AMA and labor were on opposite ends of the policy continuum.

Interest groups have played key roles in formulating NHI proposals. Lobbyists of the AMA, the insurance industry, and hospital associations have been active for years in opposing Canadian-British style NHI plans. Supporters of these lobbies received campaign contributions, and opponents were targeted for defeat during reelection campaigns. National health insurance plans were described with emotionally laden symbols and terms, such as "Sovietization"[13] or "Marxian socialization,"[14] and the specter of an inefficient, monolithic governmental agency that would severely ration health services was frequently raised. As momentum has swung toward developing a NHI proposal, these groups have put together their own proposals. For example, the Health Insurance Association of America has a plan for providing incentives such as tax deductions to enable employers to purchase low-cost health insurance.[5]

Not all physicians agreed with the AMA's stance. There are 2,500 physician members of Physicians for a National Health Program, which promotes a Canadian-style NHI. The American Medical Student Association (25,000 members) has also endorsed this proposal.[14]

Organized labor has long lobbied for NHI as it fought for health benefits in its contracts. Recently even big business has promoted the need for NHI because rising health insurance costs are seen as handicapping U.S. firms that compete with companies in countries that have NHI programs.[15,16]

Organized nursing is advocating a National Health Service that would promote health maintenance and illness prevention, rather than simply treating disease.[17]

The NHI debate would not have progressed had there not been a basic change in public perception on the issue.[18] In the past, opponents had tapped the public's spirit of individualism, emphasizing that the patient and doctor should have the freedom to choose the care and technology they think best. With a worsening economy, which made people feel more vulnerable to the threat of unaffordable and inadequate health care, the public began to see access to affordable health insurance as a human right. The stage was set for national health insurance to become a key issue in Congress and in the 1992 presidential campaign.

Recent Congressional action also suggests that Congress is more sympathetic to costly health issues. The Omnibus Budget Reconciliation Act of 1990 (a $500 billion deficit reduction package) *expanded* Medicaid coverage to cover all children in poverty (adding an estimated 5 million people to Medicaid rolls over the next 10 years) and also authorized income tax credits to help low-income families buy private insurance.[12]

Issues to Consider in Evaluating Policy Options

Although there are many papers that extol the virtues of one policy or another, only a few offer an extensive analysis of all the options.[19,20] These studies point out key questions which should be considered when comparing NHI proposals.

1) Are all people covered? This ranges from universal to segmented (which describes the current system with multiple coverage programs with different degrees of coverage). Private group insurance purchased by employers allows better access to high quality comprehensive benefits, while programs such as Medicaid provide less access and more variation in quality. The variation occurs because providers are less likely to participate in the program due to frustration with bureaucratic controls and low reimbursement rates, with each state defining its own benefit package.

2) How comprehensive are the benefits? This revolves around the debate over whether a plan should provide a minimum or comprehensive benefit package. Comprehensive benefit programs may seem extravagant at first. However, the broader the range of services covered through the plan, the more options a physician has to provide care in lower cost settings. If surgery is covered in both inpatient and outpatient settings, for example, the physician has the option of using the less expensive outpatient option. Broader benefits also mean a reduction of a two-tier system in which the rich with private insurance have greater access to higher quality care than those covered by government programs.

3) How is it financed? A progressive funding method is one in which higher income individuals pay a larger proportion of the cost. A regressive method is one in which lower income individuals pay equal or more of the cost. Out-of-pocket payments are the most regressive way to finance health care, but the flat amount charged for premiums -- regardless of income -- is also a regressive form of financing.

National health insurance plans can be divided into two basic groups. The first group comprises the single payer plans. These models rely on a single source of government reimbursement for health care, with funds provided via taxes. This would be a progressive funding solution because as a family's income goes up, it would pay more taxes and thus shoulder more of the burden of paying for the program.

The other group is made up of the "Play-or-Pay" plans. In these proposals, employers either provide private insurance to their employees or contribute to a government-managed fund that then provides coverage to the employees. The unemployed are covered by expanding current government programs. These plans tend to promote the use of current programs rather than radically restructuring them. They also allow the government to enact national health insurance without having the bill show up on the budget or look like a tax hike. The cost is hidden in the form of fewer employees hired, lower wages, or by simply passing on the cost to consumers via the increased cost of services and products.

4) What deductibles apply and are there any copayments? Most private insurance has a deductible (amount of health care costs that must be paid out of pocket before insurance coverage starts) and a co-payment schedule (payment of part of the covered services after the deductible is met). These are designed to prevent frivolous use of the health care system. Many NHI plans have deductible and cost-sharing provisions. Some are based on financial means, so that families making below a particular income (determined by family size) have less of a deductible or co-payment obligation than higher income households. Others have wage-based standards, in which the employer takes responsibility for health insurance premiums and is taxed a specified percentage of wages; the government assumes the additional cost.[12]

5) What mechanisms are used to assure efficient use

of resources? Many plans use some form of managed care. In a managed care scheme, the third party payer requires the health care provider to update them on the evaluation and treatment the patient is receiving at regular intervals during a hospitalization. The care provided is then compared with what is considered acceptable and cost effective. The care manager may make suggestions (or demands) to the physician as to what further course of action should be taken. If the care manager does not agree with the treatment provided, he or she may deny reimbursement to the physician or health care organization for all or part of the charges. There is much controversy regarding managed care. Although managed care can hold costs down, there may be a conflict between what the physician and patient believe is the best course of treatment and the care manager's primary interest, cost effectiveness. Physicians are concerned about being held legally liable if they act within managed care guidelines rather than as an advocate for the best interests of the patient, regardless of fiscal restraints.[21,22,23]

6) What services are provided? When studying these NHI plans, one notices they are specific about where money comes from and how it is managed, but are vague about how many and what type of services are provided. Frequently, they mention only that a core package of benefits will be defined. Health care providers are extremely uncomfortable with this vagueness and ask of all plans: How do these plans decide what types of care are cost effective, and who decides? Is the goal adequate care or optimal care? A review by Russell[24] provides a clear example of the cost-effectiveness decisions that will have to be made. If all women have Papanicolaou smears to screen for cervical carcinoma every three years from age 20 until age 75, the cost per year of life saved is about $13,300, compared with no screening. The cost per year of life saved increases to $419,800 if the frequency of testing is increased to every two years, and $1,064,300 per life-year saved with annual testing. How often should one test?

A woman whose cervical carcinoma goes undetected for two years because her health benefits only provide for testing every three years may give a much different answer than the bureaucrat who is looking to stretch a health care dollar.

Policy Options

In 1992, there are no fewer than 32 major NHI proposals competing for attention on the national agenda.[25] While at first glance many of them appear to be similar, each reflects a particular set of interests, biases, and assumptions. It is beyond the scope of this paper to provide a detailed analysis for each policy proposal; therefore, we examine three policies that are significantly different from each other and yet representative of other proposals. These are the National Health Program for the United States, the Consumer-Choice Health Plan for the 1990s, and the Health Access America Plan. In addition, preliminary details of the Clinton plan will be outlined.

National Health Program for the United States[26,27,28,29]

This is a single payer plan proposed by Physicians for a National Health Program (PNHP), a national group of about 2,500 physicians. This plan is very similar to the Canadian national health system. Under this plan, every person in the United States would be covered by a government health program. Private insurance for services covered in the national plan would be eliminated, although it would be available for non-covered services. A continuing program of assessing technology and cost effectiveness will determine which health care services to include, and which ineffective interventions to exclude.

Each hospital in the nation would receive an annual global budget in a lump sum payment based on past performance and projected cost of the services the hospital will provide to the population it is expected to serve. This lump sum payment would be used for operating expenses only, and not for profit purposes. Additional funds for making major capital purchases, expanding the facility, or marketing could be requested, but hospitals could not use their operating expense allocation for these purposes. This system is meant to eliminate any financial incentive to cut corners on services to increase profit margins, to charge inflated rates for services, or to provide unnecessary services in order to drive reimbursement up. Hospitals would only have to bill for services not covered by the government health plan, such as cosmetic surgery.

The government would negotiate with state medical societies a binding fee schedule for the services provided by private physicians, eliminating wide variability in physician charges. If the physician were an employee of the hospital, his or her salary would be included in the global operating budget, with no separate billing for services. Multi-specialty clinics and health maintenance organizations (HMOs) could elect to receive payments for their patients on a per capita basis (capitation) rather than billing for individual services.

The PNHP notes that there are about 1,500 insurance plans in the United States. Hospitals must determine patients' eligibility, track patient charges individually, and submit claims to each insurer according to that insurer's particular instructions. Instead of providing care, physicians are spending increasing amounts of time sorting through a complex web of requirements that must be met if the patient is to get any insurance coverage at all. Each physician has his or her own fee schedule, and in each instance, the insurance company has to determine what percentage of the cost it will reimburse. To administer all this, insurance companies employ armies of workers (PNHP notes that 6,000 people work for Blue Cross in Massachusetts alone). As a result, a disproportionate amount of our health care dollar is spent on administrative costs. They point out that 12% of U.S. insurance premiums go for overhead as opposed to 3% in the Canadian system. The PNHP believes that if the United States could cut the percentage of gross national product spent on the health care bureaucracy, from the current 2.6% to the Canadian rate of 1.1%, a savings of $62 billion per year could be realized.

The reason Canada spends so much less on health care administration and billing is that it has a single source of payment, the government. Since all patients are covered and hospitals do not have to keep track of charges for individual patients, there is little need to administer billing and collections. The savings on administration and billing costs are key because it is thought that these savings would significantly offset the costs of any increase in the use of health care in the universal plan.

Other funding mechanisms would be needed. All current funds for Medicare and Medicaid would go into this program, along with funds from state and local health care programs. During the transition period, when private insurance would be phased out, all revenues from these private plans would be turned over to the national program, less the cost of collecting the premiums. All employers would pay a health care tax for each employee. Plan proponents say that employers who currently purchase insurance would find the tax lower than current expenditures because employers who currently do not purchase health insurance would also be paying. Any remaining funding would come from an increase in income taxes, equivalent to the out-of-pocket expenses and premiums consumers would have paid otherwise. Because such taxes are progressive, the bulk of the tax burden would rest on wealthier families.

Proponents believe consumers would not have to pay more for this plan because the required taxes would be no higher than what is currently spent on premiums, deductibles, and co-payments. Major savings would be realized by the elimination of the health insurance industry, reduction of administration for billing, and removal of the profit motive through rational lump sum expenditures to health care providers.

Consumer-Choice Health Plan for the 1990s[30,31]

This is a play-or-pay plan formulated by Drs. Alain Enthoven and Richard Kronick of the Stanford School of Business.

Under this proposal Medicare and Medicaid would continue to provide coverage for the elderly and the indigent. Anyone not covered by these programs would have the option of purchasing coverage from private insurers, through their employers, or from a public agency called a "public sponsor" in the plan. Each state would be encouraged, via a system of federal incentives, to develop a public sponsor agency (PSA). The PSA would be responsible for setting up a state HMO program, specifying the services covered, enrolling people in the program, collecting premiums, and paying benefits to providers. The PSAs could put together a single basic coverage HMO program or several more comprehensive (and expensive) alternative HMO plans.

Employers would be required to cover all full-time (25 hours/week or more) employees. The employer would contribute 80% of the cost of the PSA basic plan toward the employee's insurance coverage. The employee could be covered by the PSA basic plan and pay the remaining 20% of the cost. Alternatively, the employee could choose a more expensive PSA or private plan, and pay the difference between the employer's fixed contribution and the cost of the health plan.

Employers would pay an 8% payroll tax on the first $22,500 earned by all part-time employees who are not covered by a PSA or private health plan. In addition, those employees not covered by the employer's health plan would pay an 8% tax, along with their income tax, on adjusted gross income up to a maximum determined by the size of the household. The 8% tax would also be applied to early retirees and the self-employed.

Because a flat premium covering 20% of the cost of the PSA basic coverage for each insured household is regressive, this plan recommends a federal subsidy for the employee's portion of the health insurance cost for households earning below 150% of the poverty level. To reduce the impact of this plan on small businesses (25 employees or less) which currently tend not to provide health benefits, the plan recommends a cap be placed on their contribution. If the small employer's total contribution exceed 8% of the payroll, the PSA would subsidize the excess cost.

The authors of this plan hold that there would be a 3% increase in federal health care expenditures the first year of the plan. They say that long term savings and cost controls would be realized through the cost-conscious, affordable benefit package and continued managed care efforts by health insurance providers.

Other significant play-or-pay plans are the Pepper Commission Plan,[32,33] the Clinton Plan,[34] the Health Security Partnership,[35] the National Leadership Commission Health Care Plan,[36] and the Kennedy-Waxman Bill.[37]

Health Access America[38,39]

This is a plan proposed by the American Medical

Association. While having long opposed NHI, the AMA realized that simple opposition was no longer effective. It proposed its own health care reform package in March 1990. The plan addresses four areas: universal coverage, cost containment, quality of care, and patient choice.

Universal access would be assured via a six-point plan. First, employers would be required to provide health insurance for all employees and their families. The AMA insists their plan is not "play-or-pay," noting that in such plans the employer either buys insurance or pays into a public program. In the AMA plan, the employer would have to purchase a minimum benefit package from private sources for all full-time workers. Part-time workers would receive insurance vouchers, valued at a designated percentage of their wages, which could be used to offset the cost of insurance. A series of tax benefits would go to small businesses and the self-employed for their insurance costs.

The second part of the proposal would expand Medicaid to cover all households below the poverty level. Third, the AMA advocates reform of health insurance underwriting practices, such as withholding coverage from persons with preexisting conditions. Fourth, federal incentives would encourage states to develop private, not-for-profit insurance pools to cover small businesses and non-insurable or non-insured individuals. Fifth, Medicare would be reformed to create an actuarially sound, pre-funded program. The AMA is concerned that the tax contributions of four workers fund benefits for each Medicare recipient, a proportion that will drop to two-to-one by the middle of the next century. The AMA supports a Medicare Trust Fund to be funded by contributions during an individual's working years. Finally, the AMA plan expands financing for long term care with subsidies for individuals between 100% and 200% of the poverty level.

Cost containment under Health Access America is promoted by requiring providers to make their fees public and requiring insurers to provide clear information on the cost of their plans, deductibles, co-payments, uncovered services, or how one might be dropped from the plan. This would promote a competitive market for both insurance and health care services. Second, the AMA would repeal state laws that require insurers to provide benefits over and above the basic benefit package. Third, malpractice reform would be instituted to reduce the high costs of defensive medicine and malpractice insurance, which are passed on to the consumer. Fourth, the administrative cost of processing insurance paperwork would be reduced by laws streamlining the system. Uniform claim forms is an example of streamlining. Fifth, companies that choose to self-insure their employees would have to meet the standards required of state-regulated health insurance companies. Currently, corporate self-insurance programs are exempt from regulation and critics question the quality of coverage. Finally, to prevent over-insurance, where coverage of too many ordinary, highly predictable services encourages overuse, the plan would limit tax exemptions for insurance purchases over the minimum.

The AMA holds that quality of care should come from professional organizations' developing practice parameters, to outline cost effective care, along with expanded federal funding for medical research and education. The AMA also holds that professional organizations must take greater responsibility in health promotion and disease prevention. Finally, the plan vigorously encourages physicians to voluntarily provide care at no cost or reduced rates and to accept insurance reimbursement as full payment for families below 200% of the poverty level.

The Clinton Plan[34]

The eight-point play-or-pay plan of President Bill Clinton was one of the cornerstones of his "Putting People First: A National Economic Strategy for America." Clinton would dismantle the Health Care Financing Administration (HCFA), which manages Medicare, and replace it with a health standards board that would establish annual health spending caps and a core benefits package to cover those who are not covered at work. For those who are employed, the employer can either purchase private insurance or buy into the public program. The public program would be administered through a series of local managed care networks (hospitals, clinics and doctors). In order to promote cost control, the networks would receive a fixed allocation for each person to be served. The basic benefit package would include outpatient and hospital care and prescription drugs. Mental health benefits, prenatal care, and routine health screenings would also be included. Benefits for the elderly and disabled through Medicare would be expanded to include long term care, although it is not specified how Medicare would fit into this program if HCFA is "scrapped."

The other significant part of the Clinton plan involves industry reforms. Noting that drug prices have risen at three times the rate of inflation and that Americans pay as much as six times more for some drugs than Canadians, Clinton proposes eliminating tax breaks for companies who engage in "price gouging." Similarly, he supports laws prohibiting denial of coverage to any individual and requiring all businesses be charged the same rate regardless of size. These measures would eliminate expensive underwriting practices to identify clients who are bad risks. The plan would also require uniform billing to cut administrative costs. Finally, he wants to crack down on billing fraud.

Analysis of Policy Alternatives

These policies represent different approaches to the NHI problem. The National Health Program for the United States represents a radical restructuring that basically nationalizes the health care delivery system. It is expected to be opposed by the AMA as well as the hospital and insurance industries.

The Consumer-Choice Health Plan for the 1990s is one variation on the play-or-pay theme that promotes an incremental modification of our current system. It would develop a government-run HMO for those who wish to participate, while maintaining a significant role for the private insurance system and leaving unchanged the fee-for-service system most U.S. providers use.

The Health Access America proposal holds that there is nothing wrong with the current private practice, fee-for-services system. There is simply some fine tuning needed to assure no one falls through the cracks. The role of government is to provide legislation and incentive packages and to expand the coverage of Medicare and Medicaid.

These plans will be evaluated on five criteria: assurance of universal coverage, efficiency in using health care funds, equitability of services provided, flexibility to meet future health care needs, and ease of implementation.

National Health Program for the United States

This proposal is a lightning rod for the wrath of many physicians, hospitals, and providers of health insurance.[14] Many physicians believe this plan would bring all health care down to a uniformly low level with long waits and decreased availability -- if not restrictive rationing -- of health care. Those who have experience with the Canadian system give it mixed evaluations, with some saying the quality of care would not be affected and others saying they would never return to practice in such a system. Critics argue that central planning for whole economic sectors is not feasible and that there would be problems accurately predicting operating costs for each hospital. A large bureaucracy, which may not be as cost effective as its proponents claim, would be necessary to oversee the plan. If health care utilization increases, the government would reduce per-service payments to balance the health care budget, causing physicians and hospitals to churn more and more patients out of health care mills in order to maintain incomes. Finally the argument is made that the Canadian system would not work in the U.S. because of our political culture. Canada has a long tradition of political professionals who try to serve the public, while in the U.S., there is a tradition of political patronage and catering to special interest groups. The program would not receive legislative support because of all the powerful lobbies it alienates. Navarro has argued that many of these objections are based more on ideology than empirical evidence.[40]

How does this plan stand up to the evaluation criteria? Under this program all Americans would be entitled to a certain level of basic health care. The plan is fair and effective in assuring universal coverage. However, only those with the ability to pay could receive services not covered by the plan. Thus, higher income individuals would have access to a higher level of health care. However, this system would significantly close the gap.

One part of the plan involves evaluation of cost effectiveness to determine the range of services to be provided. The Canadian experience certainly suggests significant savings in administrative costs can be realized. However, anyone who has dealt extensively with organizations such as HCFA knows that a government bureaucracy has the potential to mushroom in size and cost. Care must be taken to streamline the regulations on hospitals and providers so that administrative savings from simplified billing are not eaten up in other administrative areas. The system has the potential to be inefficient and the tax burden could be large. One would also question the flexibility of one monolithic health care bureaucracy. Given that similar systems have been implemented in Canada, Australia, Great Britain, and other areas, there is little doubt that such a system can be implemented in the United States.

Consumer-Choice Health Plan for the 1990s

This plan and others of the pay-or-play category are notable for the relatively mild reactions they evoke from interest groups. This is probably because these plans supplement the existing institutions but leave major portions of the health care system untouched.

This plan also effectively covers the nation's population. Basic levels of coverage are provided, but there is a wider range of access to different levels of health care based on the consumer's ability to pay. The plan uses current insurers, with an intermediary role for government, which may help keep costs down. The system allows an individual more choice in health care packages, if one is willing to pay for it. This plan is feasible although there is possible confusion from regulation of contributions by employers, employees, and government to various health care programs.

Health Access America

This plan does not provide for any efficient, coherent central implementing or monitoring body. It depends on a complex range of legislation, and the failure to get any one piece passed or implemented properly could prevent the plan from achieving its goals. Individuals could still fall through the cracks. For example, the insurance voucher for part-time employees may still leave health insurance plans unaffordable for lower income households. The implementation problem would be compounded because many of the initiatives would be enacted on a state-by-state basis, and wide disparities could result. Many of the issues suggested to promote cost effectiveness are necessary but would not be as effective as the economy of scale (many individuals covered under a single plan can purchase large quantities of service more efficiently than small groups) under the other two plans. It is doubtful that this plan would really change the health care climate of America.

The Clinton Plan

It is too early to effectively evaluate the merits of this plan because only a broad outline is available now, and the details of implementation are crucial to evaluating President Clinton's NHI proposal.

Conclusion

Currently the health care system in America is in crisis. The Health Access America plan essentially promotes the status quo and it is doubtful if it would successfully achieve what it sets out to do.

I visited Australia during my training to observe a comprehensive health care system first hand. My brother is an Australian national, and I have used the system myself on visits to that nation. Based on my experiences, I believe that the National Health Program for the United States proposal can provide high quality health care effectively. However, I doubt American policy makers could withstand the assault from powerful special interests if they attempted the radical restructuring this plan provides for. The alternative is to adopt a play-or-pay proposal, such as the Enthoven and Kronick proposal, which assures universal access to health care but does not radically change the system. It is likely that this or a similar option would be pursued and perhaps would reduce fears about more radical change in the future.

Congressional leaders, President Clinton, and proponents of NHI indicate that 1993 is the time for the United States to leave the company of South Africa, the only other developed nation that does not provide its citizens universal access to health care. It remains to be seen which solution is chosen or if there will be a stalemate. The only thing that is certain is that the debate will be vigorous as the nation attempts to sort out its health care priorities. It will be crucial that all physicians actively evaluate the range of NHI proposals available today and provide Congress with feedback as individual citizens with regard to the direction we believe the nation should take.

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Gastrointestinal Endoscopic Pathology in Patients Seropositive for Human Immunodeficiency Virus

Maurizio Bonacini, MD and George Skodras, MD

Endoscopic pathological findings in human immunodeficiency virus (HIV) - positive patients have never been reported from the Midwest. We review the endoscopic and histologic findings in HIV-positive patients referred for endoscopy.

The major symptoms that prompted referral to the gastroenterology service were: diarrhea (26%), esophageal symptoms (26%), abdominal pain (19%) and hematochezia (12%). One hundred and twenty-nine symptomatic episodes in 90 patients were retrospectively reviewed. Overall, a diagnosis was reached in 57% of the symptomatic episodes, but in only 32% was a specific infection or neoplasm detected. The most common lesions responsible for diarrhea, esophageal symptoms and pain were *Histoplasma* colitis, *Candida* esophagitis and cytomegalovirus colitis. The majority (81%) of the lesions were treatable.

The diagnostic yield was significantly higher (44%) for evaluations of patients who were CDC class IV (median CD4, 30 cells/mm³), compared with 14% of patients of other classifications (median CD4, 424 cells/mm³). In addition, evaluation of diarrhea, esophageal symptoms and pain yielded a diagnosis in 41% of the episodes, vs. 11% for evaluation of other symptoms.

We conclude that gastrointestinal symptoms are common in HIV-positive patients in the Kansas City area, but are often minor, and that specific infections or neoplasms are diagnosed more commonly in CDC class IV patients and in patients with diarrhea, esophageal symptoms and abdominal pain.

Gastrointestinal (GI) symptoms are frequent among patients with human immunodeficiency virus (HIV) infection and, not surprisingly, these patients are often found to have opportunistic infections and neoplasms in the alimentary tract. Most studies of the GI manifestations of HIV infection have concerned diarrhea[1] or the odynophagia/dysphagia symptom complex.[2] Current reports are vague about the prevalence of other symptoms. Moreover, most reports have originated from either the East[1,3-5] or the West Coast[2] of the United States, Europe[6,7] or Africa.[8] Some authors have emphasized that geographic location may alter the spectrum of infectious agents.[3,8]

This study is a retrospective analysis of GI symptoms, endoscopic abnormalities and pathologic diagnosis in HIV seropositive patients evaluated in an urban Midwestern area.

Patients and Methods

We retrospectively reviewed the records of patients with HIV infection who underwent diagnostic endoscopic evaluation for GI symptoms at Truman Medical Center, in Kansas City, over a 54-month period (July 1987 to December 1991). For patients evaluated more than once, only procedures performed at intervals greater than six months were considered separately, if performed for an identical indication. Endoscopies carried out to monitor a previously diagnosed pathologic process were not

Table 1 - Characteristics of 90 HIV seropositive patients who underwent endosocpic evaluation

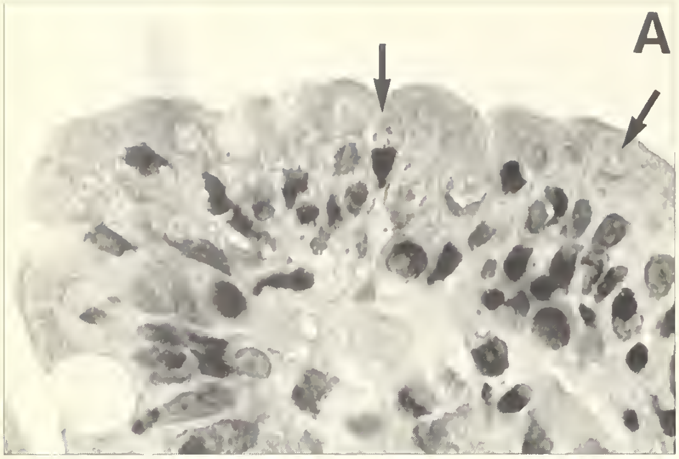
	Group A *	Group B #
Number =	64	26
Median CD4 cells/mm³ (range)	30 (5 - 147)	424 (217 - 1,502)
Number of symptomatic episodes evaluated	90	39

* CDC class IV HIV infection
# CDC class II (n=19) or unknown status (n=7)

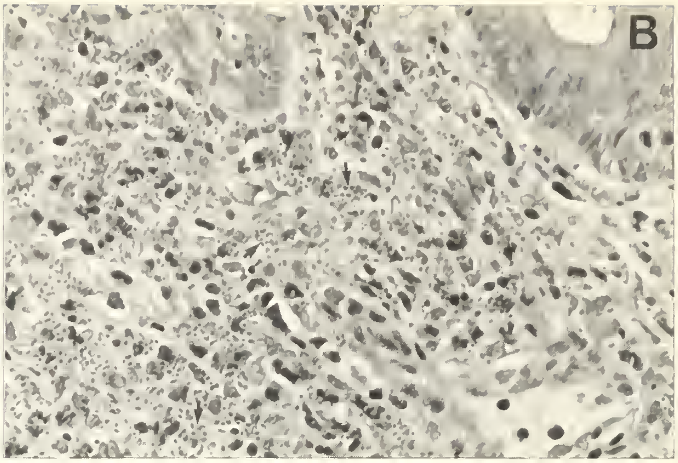
Table 2 - Frequency of gastrointestinal symptoms in HIV seropositive patients referred for endoscopic evaluation

	number = 129
Diarrhea	26%
Odynophagia / Dysphagia	26%
Abdominal pain	19%
Hematochezia	12%
Rectal pain	4.6%
Hematemesis / melena	4.6%
Nausea and/or vomiting	3.7%
Other	3.1%

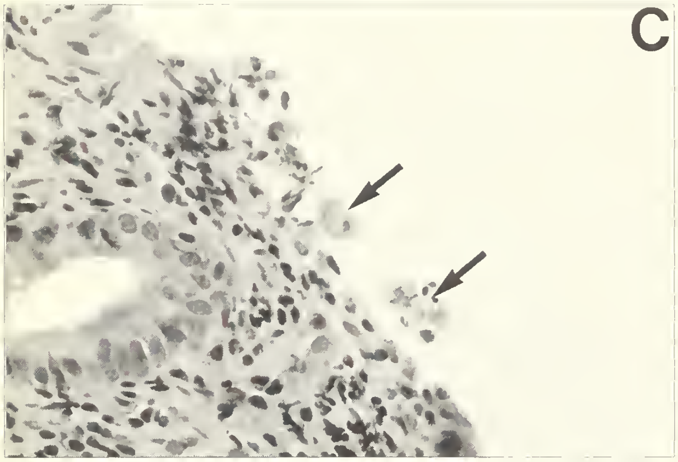
From Section of Gastroenterology and Liver Diseases and Department of Pathology, Truman Medical Center, Kansas City, Missouri. Reprint requests to Department of Pathology, Truman Medical Center, 2301 Holmes Street, Kansas City, MO 64108 (Dr. Skodras).



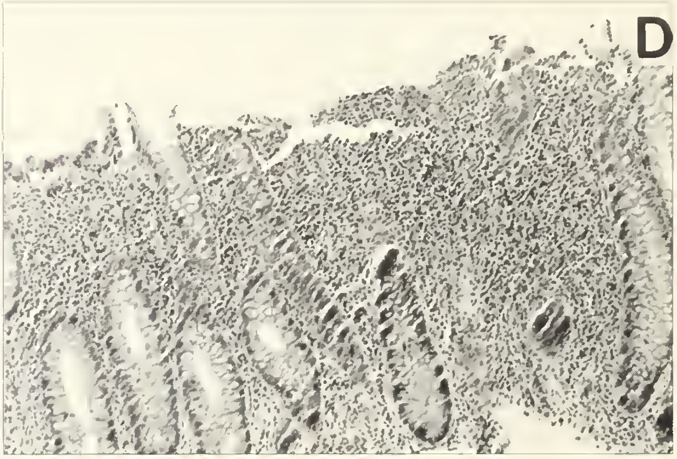
Duodenal biopsy showing several Microsporidia (arrows) within the cytoplasm of surface epithelial cells (Hematoxylin and eosin; magnification X1,000).



Splenic flexure of colon infected with H. capsulatum. Numberous fungal forms are seen at 12 o'clock within the lamina propria (Periodic Acid Schiff; X 1,000).



Ameba organisms (arrows) are seen along the surface of colonic mucosa (Hematoxylin and eosin; X400).



Rectal biopsy of superficial ulceration. No causative microorganism was identified despite extensive search and immunohistochemical staining (Hematodylin and eosin; X100).

included in this study. If several symptoms were present, the chief complaint was used as the indication for the procedure.

The patients were referred from either the medical wards of the hospital or the infectious diseases (ID) clinic. The clinic provides care for HIV seropositive patients admitted to or being discharged from our Medical Center, and its patient volume is used as the denominator on which our prevalence data are based. The four main reasons for referral to the endoscopy unit were: diarrhea undiagnosed after stool analysis (at least one specimen obtained for culture, ova and parasites), esophageal symptoms (odynophagia and/or dysphagia), abdominal pain, and hematochezia.

Diagnostic esophagogastroduodenoscopy (EGD), sigmoidoscopy, colonoscopy and retrograde cholangiopancreatography (ERCP) were carried out with a Pentax videoendoscopy system. Because the endoscopic evaluations were not part of a study protocol, the type of procedures varied from patient to patient. Tissue samples were collected at the discretion of the consulting gastroenterologist. Findings were "normal" if the mucosa was endoscopically normal if the mucosa was endoscopically normal or showed only mild erythema without friability. A diagnosis was "specific" when an infectious agent or a neoplasm was found in endoscopically abnormal mucosa (e.g. erythema with friability, erosions or ulcers). A diagnosis was "nonspecific" when the mucosal lesions did not yield any pathogens by histology or cultures. *Candida* infection was diagnosed on the basis of the characteristic endoscopic appearance of raised, white plaques and histological or cytological evaluation, or both. Other fungal infections were diagnosed histologically, based on microscopic appearance with special stains. Viral infections were diagnosed by the appearance of characteristic inclusions on biopsy or a positive tissue culture. *Giardia* and *Cryptosporidium* were diagnosed on the H&E stain of tissue samples. *Microsporidia* were diagnosed on standard hematoxylin and eosin stain; electron microscopy was not used. Immunoperoxidase stains for cytomegalovirus (CMV) and herpes simplex (HSV) were performed in all cases with abnormal endoscopic findings and nonspecific pathologic diagnoses.

From the medical records, we retrieved measurements of the patients' circulating T4 (helper) lymphocyte levels obtained within three months of the endoscopic procedure. Patients were divided into two groups according to published criteria:[9] CDC class IV (group A) and other CDC classes or unknown status (group B).

Statistical analysis was performed using the chi-squared method with Yates' correction. A p value < 0.05 was considered significant.

Results

From mid-1987 through 1991, 397 HIV seropositive patients were evaluated at least once in the ID clinic at Truman Medical Center. Of those, 90 (22.6%) were referred for further GI evaluation (Table 1). The patients underwent 159 diagnostic endoscopic procedures to evaluate 129 symptomatic episodes (indications). Eighty-six patients were male and 89% were homosexual. Group A comprised 64 patients with a median CD4 count of 30 cells/mm^3. Group B (26 patients) had a median CD4 count of 424 cells/mm^3. The endoscopic evaluation was similar for both groups.

The most common indications for endoscopic evaluation were diarrhea (26%), esophageal symptoms (26%), abdominal pain (19%), hematochezia (12%), and miscellaneous indications (15%)(Table 2).

Overall, 74 (57%) of 129 evaluations were abnormal, but only 42 (32%) yielded a specific infectious or neoplastic diagnosis. Analysis of the four most common indications for endoscopy (Table 3) showed that a specific diagnosis was significantly more frequent in group A (35/80, 44%) than in group B (4/28, 14%) ($p = 0.01$). Also, evaluation of diarrhea, esophageal symptoms and abdominal pain yielded more often a specific diagnosis (38/93, 41%) than evaluation of other symptoms (4/36, 11%) ($p = 0.005$). Of the 42 specific lesions, at least 34 (81%) were treatable. Nonspecific diagnoses are summarized in Table 4.

Thirty-four episodes of diarrhea were evaluated in 25 patients in group A and 9 patients in group B. Nineteen evaluations were done by EGD and sigmoidoscopy, 10 by sigmoidoscopy and five by colonoscopy. Overall, 18 (53%) were normal and 10 (29%) yielded a specific diagnosis. Small intestinal *Cryptosporidium, Giardia* and *Microsporidia* (Figure) were found in five patients; colonic histoplasmosis (Figure), CMV and enterovirus infection were found in another five (Table 5). Two of six nonspecific cases showed extensive colonic mucosal damage, but no organism was seen on histological examination, which included immunoperoxidase studies for CMV and HSV.

Thirty-four episodes of odynophagia or dysphagia were evaluated in 34 patients (27 group A and 7 group B) with 34 EGDs. The respective percentages of normal, nonspecific and specific findings were 47%, 3% and 50%. The most common pathogen by far was *Candida*, either alone (76%) or with another infectious agent (12%)(Table 5).

Table 3 - Diagnostic yield of endoscopy by symptoms in HIV seropositive patients

	Normal endoscopy		Nonspecific diagnosis		Specific diagnosis	
Group	A	B	A	B	A	B
Diarrhea (n=34)	14	4	2	4	9	1
Odynophagia/Dysphag (n=34)	10	6	1	0	16	1
Abdominal pain (n=25)	4	3	5	2	10	1
Hematochezia (n=15)	3	2	6	3	0	1
Rectal pain (n=6)	1	1	0	3	1	0
Hematemesis/melena (n=6)	0	1	1	4	0	0
Nausea / vomiting (n=5)	3	0	0	0	2	0
Total	35	17	15	16	38	4

Table 4 - Nonspecidfic diagnoses in HIV-positive patients with GI symptoms

Symptom	Diagnosis	Number
Diarrhea	Idiopathic colonic ulcers Idiopahtic colitis Colon adenoma(s)	2 2 2
Odynophagia / dysphagia	Idiopathic esophageal ulcer	1
Abdominal pain	Peptic ulcer disease Idiopathic esophagitis H pylori gastritis Chronic pancreatitis Sclerosing papillitis	3 1 1 1 1
Hematochezia	Hemorrhoids Anal fissure Idiopathic colitis Colon diverticula Condylomata	3 3 1 1 1

Table 5 - Specific diagnoses associated with gastrointestinal symptoms in HIV seropositive patients in Kansas City

No. symptomatic episodes			Etiology	
Diarrhea	34	Small Intestine	Cryptosporidium G. lamblia Microsporidia	2 2 1
		Colon	H. capsulatum Cytomegalovirus Enterovirus	3 1 1
Odynophagia / Dysphagia	34	Esophageal	Candida Candida + AFB Candida + HSV CMV + HSV HSV	13 1 1 1 1
Abdominal pain	25	Stomach	Kaposi Sarcoma	1
		Small Intestine	Cryptosporidium papillitis MAI Giardia Adenovirus	1 1 1 1
		Colon	CMV H.capsulatum Amebiasis	4 1 1
Hematochezia	15	Colon	Amebiasis	1

Twenty-five episodes of abdominal pain yielded seven normal evaluations (28%), seven nonspecific (28%) and 11 specific (44%) diagnoses. Evaluations included 10 EGDs, eight EGDs plus lower endoscopies, five lower endoscopies and three ERCP's (one following an EGD). Cytomegalovirus colitis was the most common lesion (Table 5).

Hematochezia was most often attributed to non-specific lesions such as anal fissures and hemorrhoids (Table 4). Five (33%) of the evaluations had normal findings, and only one (7%) revealed a specific infection, amebic colitis (Figure).

Hematemesis was due to ruptured esophageal varices four times in the same patient. A duodenal ulcer was found in another patient, and the source of bleeding remained undiagnosed in the third case.

Two patients had an anal fissure, one had an idiopathic rectal ulcer, one had herpes simplex (HSV) proctitis, and two patients with rectal pain remained undiagnosed.

The five patients with nausea or vomiting were in group A: two had an opportunistic lesion (gastric Kaposi's sarcoma and HSV esophagitis). The other three had no upper gastrointestinal lesions. In two patients, an ERCP was done to investigate an elevated serum alkaline phosphatase; results were normal in both cases. One patient underwent EGD after results of a barium swallow were abnormal; findings from the study were normal. Finally, a patient with disseminated histoplasmosis underwent sigmoidoscopy to rule out colonic involvement.

Discussion

A little more than 10 years ago, the first reports of acquired immunodeficiency syndrome emerged in the medical literature. Gastroenterologists now evaluate increasing numbers of patients with HIV-related intestinal illnesses, even in geographic areas not traditionally associated with HIV disease. The experience at Truman Medical Center, an inner city hospital in the Midwest, has been somewhat different from other reports.[10]

Regarding the frequency of symptoms, abdominal pain and rectal bleeding were significant indications for endoscopy (31% of the total), a fact not sufficiently emphasized. Only 22.6% of patients seen in our HIV clinic were referred for endoscopy over a four and a half year period, as compared with 65% in Australia.[10]

Unlike other researchers,[11] we found a significant difference in the yield of endoscopy in patients at different stages of HIV disease. Overall, 42% of patients with CDC stage IV HIV infection (group A) had a specific opportunistic lesion diagnosed with endoscopy, as opposed to 14% of patients with CDC state II or unknown (group B).

Also, we found that endoscopic evaluation of selected symptoms (diarrhea, esophageal symptoms and abdominal pain), was significantly more productive (41%) than evaluation of all other symptoms (11%).

The yield of specific infections or neoplasms following endoscopic investigations for the diagnosis of diarrhea, has varied from 38% to 85%.[1,12] Multiple pathogens have been found in 11% to 40%.[1,12] The major etiologic agents differ in various geographic areas. For example, CMV is the most common in the United States,[1,3-5] *Cryptosporidium* in Europe and Africa,[6-8] and CMV and MAI are equally frequent in Australia.[10] In our population, no pathogen predominated, although histoplasmosis infection was fairly common (9%). Since few studies have included electron microscopy as a routine part of histologic examination, the prevalence of GI infection with microsporidia has probably been underestimated.[5] In our study, 29% of diarrheal episodes were associated with an infection diagnosed with endoscopic samples; even if patients in group B are excluded, only 36% of immunocomprised patients had a specific lesion. The discrepancy between our results and those of others may be explained by a combination of factors. First, although most of our patients were CDC class IV, they may have been relatively more immunocompetent than patients in earlier reports, who may have been diagnosed much later in the course of HIV disease. Second, electron microscopy was not routinely performed, making it possible to miss additional cases of intestinal microsporidiosis. Thirdly, not all patients underwent both upper and lower GI endoscopy. Finally, the frequency of intestinal pathogens observed in this particular geographic area may indeed be lower than in other regions.

The etiology of esophageal symptoms in patients with HIV infection has been studied extensively.[2] A specific infectious diagnosis was somewhat less common in our series: 17 of 34 episodes (50%) versus 72 of 110 (65%).[2] In our experience, Candida was the most common infectious agent, but CMV infection (3%) and multiple pathogens (9%) were less common than in the study from Los Angeles (29% and 24%, respectively).[2]

Abdominal pain without diarrhea has been reported in 7% of patients with AIDS.[13] Half of these patients had nonspecific findings, such as ileus or hepatosplenomegaly; 18% had intestinal KS.[13] In the current study, endoscopy carried out to evaluate abdominal pain resulted in diagnosis of an opportunistic infection or neoplasm in 11 of 25 cases (44%). Various forms of peptic ulcer disease were seen in 16%. It is possible that routine gastric biopsies would have revealed more cases of *Helicobacter pylori* infection; however, the role of this bacterium in dyspeptic symptoms is still unclear.

Evaluation of other symptoms often yielded findings similar to those found in immunocompetent patients. Local disorders, such as anal fissures and hemorrhoids, may be diagnosed without endoscopy.

In conclusion, we found that only a minority of patients with HIV infection at our institution have GI complaints severe enough to be referred for endoscopy. Endoscopic evaluations were more often diagnostic in CDC class IV HIV-positive patients and in patients with diarrhea, esophageal symptoms and abdominal pains opposed to other symptoms.

The authors are grateful for the cooperation of the medical and nursing staff of the Truman Medical Center endoscopy unit and the assistance of Larry Simmons, RN.

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Lynthia B. Andrews, DO, 3101 Broadway, Kansas City, MO 64111, has become a member of the Buchanan County Medical Society. Dr. Andrews received her doctor of osteopathy at the University of Health Sciences, Kansas City, MO. She completed an internship at the University of Health Sciences, Kansas City. Dr. Andrews specializes in general practice.

James E. O'Rourke, MD, Hospital Lane & Center Dr., Ste. Genevieve, MO 63775, has become a member of the Perry-Ste Genevieve County Medical Society. Dr. O'Rourke received his medical degree at St. George University, Grenada, West Indies, in 1981. Dr. O'Rourke completed his residency at the St. Luke's Hospital, Duluth, MN. Dr. O'Rourke specializes in family practice.

Michael J. Schwartzman, DO, 6400 Prospect, Suite 316, Kansas City, MO 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Schwartzman received his doctor of osteopathy at the University of Osteopathic Medicine & Health Sciences, Des Moines, Iowa, in 1984. He completed his residency at the University of Minnesota, Minneapolis, MN. Dr Schwartzman specializes in neurology.

Joseph W. Sharlow, MD, 120 Pointe Basse, St. Genevieve, MO 63670, has become a member of the Perry-Ste Genevieve County Medical Society. Dr. Sharlow received his medical degree at the University of Arkansas, Little Rock, AR, in 1985. He completed his residency at the University Hospital of Arkansas, Little Rock. Dr. Sharlow specializes in general surgery.

Blake J. Williamson, MD, 2301 Main St., Kansas City, MO 68104, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Williamson received his medical degree at the University of Nebraska, Omaha, Nebraska in 1977. He completed his residency at the University of Iowa, Iowa City, IA. Dr. Williamson specializes in family practice.

Michael D. Wright, DO, 5325 Faraon, St. Joseph, MO 64506, has become member of the Buchanan County Medical Society. Dr. Wright received his doctor of osteopathy at the University of Health Sciences, Kansas City, MO, in 1983. He completed his residency at University Hospital, Kansas City, MO. Dr. Wright specializes in anesthesiology.

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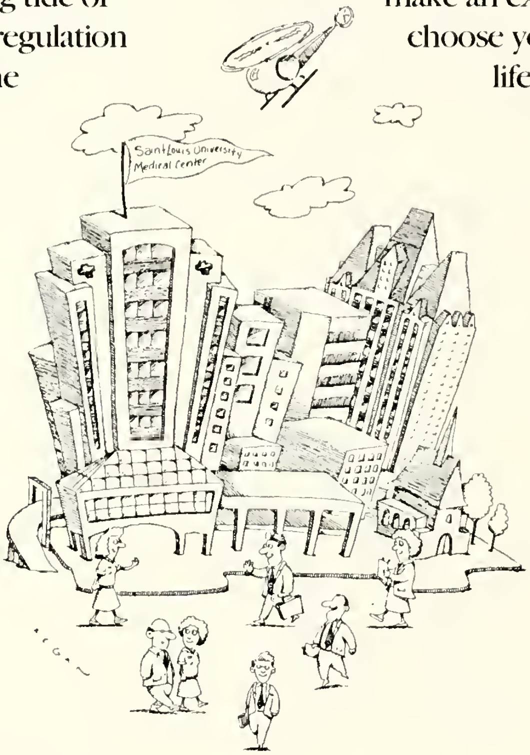
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Missouri pathologist is selected for AMA minority physicians advisory committee

"When I was shining shoes to earn money for school," said Gordon Johnson, MD. "I read an article one day that told about how Americans ranked the various professions. Physicians were the most respected and shoe shine boys were at the bottom. I remember thinking, 'I'm at the bottom - can I move up to the top?'".

Twenty-five years later, it seems Johnson, 42, did move up. Certified as a pathologist, he is chairman of the department of laboratory medicine at Jefferson Memorial Hospital in Crystal City/Festus, Missouri.

Energetic and outgoing, he talked with *Missouri Medicine* recently about being named in October 1992 to the American Medical Association's Advisory Committee on Minority Physicians. Active in local affairs and medical issues, he has joined with 10 other AMA members who have been asked to address the concerns of African-American, Native American, and Hispanic doctors and their patients.

"This doesn't cover everyone that could be considered a minority member," said Johnson. "There are other groups, such as Asian-Americans, women, and International Medical Graduates, who deserve special attention, too, but we decided to concentrate first on the populations that have the largest numbers before expanding our scope to the other groups."

Specifically, the newly formed committee's mission is to pinpoint health needs of minority Americans and suggest activities that will meet these needs. The committee also will offer advice and direction to the Board of Trustees concerning political matters and programs that directly impact minority physicians and medical students. The committee will also keep abreast of data, trends, policy and ongoing activities regarding the health status of minorities. It will monitor membership and representation of minority physicians and medical students in the AMA and in U.S. medical schools.

"We are still defining our mission," Johnson said. "But, it looks like we will be concentrating on issues such as how to encourage more minority students to enroll in medical schools and how to improve access to health care for minorities, which includes enticing more minority doctors to work with their minority patients at the primary access levels."

Programs such as "3000 by 2000", a plan sponsored by the Association of American Medical Colleges to more than double minority student enrollments in medical schools by the year 2000, deserves support, said Johnson, but personal action is also required. He believes responsibility for telling black and Hispanic students about their opportunities in medicine rests with minority physicians.

"Minority doctors must consider it a personal duty to tell minority children that they too can have the same opportunities that we have experienced," Johnson said. "Native American kids need to hear that message from Native American doctors, Hispanic kids from Hispanic doctors, African-American from African- American, and so on.

"It is part of our giving something back to medicine. I make it a point to advocate medicine as a career at every 'career day' at our high schools. We have to make minority children aware of their opportunities early in their high school careers, that's when they decide to go for it or not."

Dr. Johnson acknowledged that he entered medical school at an opportune time, the early 1970s. It was a time when professional schools throughout the U.S. began accepting minority students in numbers large enough to satisfy Federal guidelines. Had he applied only a few years earlier, he might have had to wait in line, perhaps for years, for admission as a "token" minority student at an all-white medical school, or as one of the few hundred black students who matriculated into the two predominately black medical colleges in the United States.

Minority physicians, such as Johnson and others, broke new ground a generation ago by being admitted to medical schools, but, unfortunately, numbers of incoming minority medical students and practicing doctors remain low when compared with the population numbers of the various minorities in America. There are not enough minority physicians to serve the minority patient populations. The cultural mismatch between physician and minority patients that often occurs because of this shortfall in minority doctors adds to the so-called medical access crisis.

"A white doctor working on an Indian Reservation can give excellent medical care," said Johnson. "That's not the issue. But, that doctor isn't part of the local culture and most likely will move on, perhaps when his or her residency program is finished, to practice where that doctor will feel more at home. A Native-American doctor, on the other hand, (assuming tribal backgrounds are compatible) would be more comfortable with the culture, be an inspiration to the young people, and probably practice better medicine in terms of the impact he or she would have on patients."

Part of the problem with implementing such an obvious remedy, Johnson noted, is that a doctor working on a reservation today doesn't earn enough to cover his or her medical liability insurance costs each year, not to mention income to live on. And, for young black or Hispanic doctors with large medical school debts to pay, opening a private practice in an inner-city ghetto probably would be financial suicide. Doctors want to do the right thing, Dr. Johnson said, but lack of public awareness and support prevents them from returning to their old neighborhoods or rural communities.

"Locating doctors geographically where they can do the most good for their patients, without penalizing them financially, should be a priority. Getting them involved with primary care, instead of narrower specialties, would insure they would have maximum medical and social influence within their communities."

Primary care access is a hot issue, Johnson said. "Minority patients are being ignored. I was medical examiner for Jefferson County for 10 years and, the general health of the minority individuals that I examined was poor. Nationally, millions of Americans do not have adequate access to our health care system. A considerable percentage of those people are minorities. And, this is not just an urban, inner-city problem. African-American farm workers who live in rural areas like Missouri's Bootheel are being excluded to a large extent, too."

Lack of access for minorities may grow worse in coming years due to their numbers alone. Minority populations are tending sharply upwards. If Census Bureau projections prove true[1], the country's head count will inflate by 50 percent to 383 million by the year 2050, only 57 years from now. This increase will be disproportionately driven by the minority segments of America's total population.

America's non-Hispanic white population, which comprises 75 percent of the 258 million total in 1993, will increase in numbers only slightly, up by 11 million. This means the nation's white non-Hispanic population will account for slightly over 50 percent of the projected total population. Meanwhile, African-American, Hispanic, native American, and Asian minority segments will grow in numbers until they constitute nearly 50 percent of the American population.

Dr. Johnson admits it will not be an easy task to attract more minority students to medical schools, to improve minority health access, or to place minority physicians in locations and specialties where they will be most effective. But, with political pressure and economic incentives, it can be accomplished. He thinks political action is the key to managing a diverse medical future.

"If you care about the health care of your patients, then you must care about politics," said Johnson. "You can not maintain proper levels of medical care or see that your patients get the social care they are entitled to unless you are involved in the political arena."

Dr. Johnson, first recipient of the College of American Pathologist's William Kuehn Outstanding Communicator Award, is as active in community affairs in Jefferson County as he is in professional activities at the state and national levels. He calls for physicians to maintain the leadership roles they traditionally have held in their local communities.

"When I was a shoe shine boy, I thought doctors were respected mainly because they were doctors. Now, I've learned we have to earn that unqualified respect from our communities by performing very good medical and social services every day. There's nothing automatic about it."

---

[1] "Forget Zero Population Growth", *US News & World Report*, December 1992, 113(23):18.

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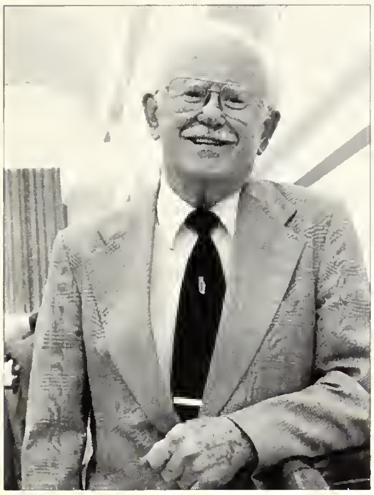
J. Vernon Luck, MD

J. Vernon Luck, MD, has made a donation to establish a professorship in his name for the school's division of orthopedic surgery. Dr. Luck, a well-known surgeon, graduated from the two-year basic sciences program at MU in 1929, and completed his medical degree at St. Louis University. He has invented several orthopedic devices including the Luck bone saw and the Luck cup for hip surgery. Dr. Luck is a clinical professor emeritus of orthopedic surgery at the University of California. He has served as vice president of the American Board of Orthopedic Surgery, chairman of the American Medical Association's Orthopedic Section and as president of the Orthopedic Research and Education Foundation and the Hip Society. His pathological studies have contributed to the medical identification of Battered Child Syndrome, after which laws were passed to protect such children. The Orthopaedic Research Center at the Los Angeles Orthopaedic Hospital was named after Dr. Luck in 1987 and he received an honorary doctor of humanities degree at MU's Sesquicentennial Commencement in 1989.

Marion Merrell Dow Inc. will fund a three-year research fellowship program for the department of internal medicine. The awards will be presented to postdoctoral fellows in any of the department's ten divisions, residents enrolled in the department's clinical investigator program and house officers pursuing research with an established mentor.

Elizabeth Garrett, MD, associate professor of family and community medicine, was elected to a three-year term on the board of directors of the Society of Teachers of Family Medicine.

Susan Hazelwood, BS, a research associate with the Multipurpose Arthritis Center, has been appointed to the Missouri Safe Drinking Water Commission. The nine-member commission approves and enacts all rules and regulations necessary to implement, administer and enforce the Safe Drinking Water Act. She will be representing the water-consuming public and environmental groups.

Mark Martin, PhD, assistant professor of biochemistry, received an Established Investigatorship Award from the American Heart Association. The five-year award will support research into gene regulation. Dr. Martin is concerned with genes that control tissue structure. The AHA award is directed toward junior faculty scientists who are building their research programs.

James J. Sowash, MD, assistant professor of clinical obstetrics and gynecology, was one of six individuals named from throughout the country to serve on the Association of Professors of Gynecology and Obstetrics undergraduate medical education committee's task force. The group will develop a booklet titled, "The Challenge to Teach Clinical Skills."

Steve Zweig, MD, associate professor of family and community medicine, was appointed associate editor of the new American Medical Association-sponsored journal *Archives of Family Medicine.*

Washington University

Neuroscientist are becoming optimistic that treatments for Lou Gehrig's disease, Alzheimer's disease and even stroke may be possible soon. According to **Dennis W. Choi, MD, PhD,** head of neurology, the optimism stems from a fundamental change of thinking by neuroscientist who believe that they can alter the brain's biology to limit the damage done by disease.

Dr. Choi published an article explaining his study of glutamate, one of the brain's major neurotransmitters. He has been studying the best way to block glutamate toxicity. This work has spawned the now popular belief that NMDA blockers, or antagonists, may be useful in a wide range of brain and spinal cord injuries, not just those caused by stroke.

Research scientists are beginning to grasp the molecular details of brain and spinal cord injury.

Continued on page 97

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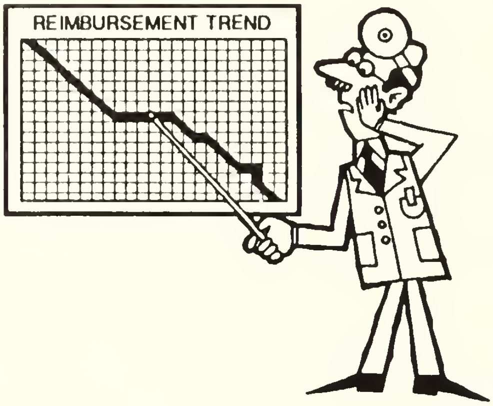

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The interim meeting of the AMA Resident Physicians Section in Nashville, TN was a red-letter day for the MSMA-RPS. This meeting marked the first time a resolution authored by the MSMA-RPS was passed in the RPS assembly. The resolution, entitled "Child Death Investigation Laws," asked the AMA draft model legislation addressing mandatory reviews of all child deaths through the establishment of child death review teams, and that this model legislation be disseminated to all state medical societies.

The concept behind this model legislation is Missouri's own child death investigation law, which mandates investigation of the deaths of all children under age 15. Congratulations to the Missouri RPS delegation for their hard work on this resolution.

MSMA residents attending the meeting were:

Lucky Chopra, MD
Debra J. Kearman, MD
Sam Page, MD
Jerry Thruman, MD
Kimberly Witkop, MD
Maria Evans, MD
Val Le, MD
Robert G. Swanson, MD
Patrick Tong, MD

Other resolutions of interest passed at the AMA-RPS assembly included subjects such as:

- Restriction of tobacco advertising to a "generic" black and white style without cartoons, logos, photos, and graphics.
- Extensive education to counteract the increasing number of firearms deaths in the U.S..
- Asking residency programs to provide anonymous faculty evaluations at the same frequency as resident evaluations.
- Insuring that residency programs offer HIV-indemnity insurance.

Cooperative efforts through the AMA, Liaison Committee on Medical Education, and the Accreditation Council for Graduate Medical Education to expand the emphasis of primary care and encourage students and residents to enter primary care without quotas, penalties, or other coercive means.

Do you have an idea for a resolution for the next AMA-RPS meeting in June or the April MSMA meeting? If so, please contact Tom Holloway at 800/869-MSMA.

Continued from page 95, Medical School News

By studying the problem of nerve cell death across disease boundaries, researchers hope to learn about underlying principles to devise new therapies.

Twenty years ago neuroprotective drugs were considered a fantasy by scientists. Today there are candidate neuroprotective drugs in the lab and a few have made it to the clinic.

Three researchers have teamed together to change the way scientists and physicians view the often fatal condition, bacterial sepsis. Sepsis is the result of infection and has been defined as the presence of bacteria or their products in the blood stream. It is the leading cause of death in surgical intensive care units and neonatal units. There are two distinct theories on its cause: one is deficient cellular energy metabolism and the other is deficient oxygen delivery to tissues, resulting in a cellular hypoxia. **Joseph J. H. Ackerman, PhD,** professor and chair of the chemistry department, **Richard S. Hotchkiss, MD,** assistant professor of anesthesiology and **Irene E. Karl, PhD,** research professor of medicine, have disputed these theories in a study of a rat sepsis model.

Using nuclear magnetic resonance (NMR), they examined in vivo rat hind limb muscle of septic rats and reported no substantive decreases in cellular energetics, no marked decline in blood flow, and no evidence of oxygen deficiency to the body's cells. The findings challenge conventional wisdom in treating the condition and have opened up new considerations for future treatment.

Researchers are using ultrasound to locate bile duct stones in patients who are going to have gallbladder surgery. **Steven A. Edmundowicz, MD,** and **Giuseppe Alipertic, MD,** assistant professors of medicine, and **William D. Middleton, MD,** associate professor of radiology at the Mallinckrodt Institute found that the combination of ultrasound with endoscopy in which the ultrasound is used internally is as accurate as the endoscopic retrograde cholangiopancreatography (ERCP). The study was prompted by the recent explosion in the use of the laparoscope in surgery. Because the laparoscope only requires a small incision stones were difficult to find during surgery. The ERCP injection of radiopaque dyes could cause inflammation in patients. Endoscopic ultrasound is less invasive and gives a clearer picture of the stone.

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The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send CME information for listing in *MISSOURI MEDICINE*. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

February

Every week to Oct. 1, 1993. AIDS, Malpractice, OSHA and Medicare. 28 resort-based classrooms. Contact American Educational Institute, Inc., 401 S. Woodward, Suite 333, Birmingham, MI 48009, 800/354-3507, fax 313/433-0615.

5 - ***Kansas City*****: Neonatal Care.** 7 credit hours. Contact The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132, 816/276-4306, Toll free, in Missouri, 800/892-5771, ext. 4306, bordering states, 800/821-5140, ext. 4306.

6 - ***St. Louis*****: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic.** 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

6 & 7 - ***St. Louis*****: Advanced Cardiac Life Support Provider/Recertification Course.** 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

7 - ***St. Louis*****: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic.** 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

8 - ***St. Louis*****: 7th Annual Daniel R. Biello Memorial Lecture by Richard Wahl, M.D., "New Horizons in Oncologic Nuclear Medicine."** For more information contact the Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

10 - ***St. Louis*****: Diabetes and Dyslipidemia: Diagnosis and Treatment.** Contact the Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid, St. Louis, MO 63110-1093, 314/362-6893 or 800/325-9862.

12 - ***St. Louis*****: Feeling Good Workshop with David Burns, M.D., Overcoming Anxiety and Enhancing Intimacy.** 6 credit hours. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

20 - ***St. Louis*****: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic.** 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

20 & 21 - ***Columbia*****: 16th Annual Family Practice Update.** Contact Barry Kling, University of Missouri-Columbia School of Medicine, Office of CME, MA215 Health Sciences Center, Columbia, MO 65212, 314/882-4105.

25 to 27 - ***St. Louis*****: Practical Anatomy and Surgical Technique Workshop: Temporal Bone Surgical Dissection - Exploring New Surgical Instrumentation with Midas Rex Hands-On Workshop.** 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

27 - ***St. Louis*****: Women and Men in Health Care.** 7.5 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

March

1 to May 17 (Monday evenings) - ***St. Louis*****: Internal Medicine Review.** 36 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

5 - ***Kansas City*****: Health Care for the Older Woman.** 5.5 credit hours. Contact The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132, 816/276-4306, Toll free, in MO, 800/892-5771, ext. 4306, bordering states, 800/821-5140, ext. 4306.

6 to 13 - ***Vail, CO*****: Update in Clinical Medicine.** Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

7 to 9 - ***San Diego*****, CA: 13th Annual Conference on Peritoneal Dialysis.** Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

8 - ***St. Louis*****: Cost Efficiency of Screening for Colon Cancer.** City-Wide Radiology Conference by David Gelfand, M.D. For more information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

15 to 17 - ***St. Louis*****: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part I: Cervical Spine Trauma.** 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

18 & 19 - ***St. Louis*****: Gastrointestinal Surgery: Refresher Course and Update.** 14 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

18 to 20 - ***St. Louis*****: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part II: Thoracolumbar Spine Trauma.** 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

25 to 27 - ***Norfolk, VA*****: Laboratory Workshop in Breast Reconstruction.** Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

26 - ***St. Louis*****: Neonatal Pharmacology.** 6.25 credit hours. Contact Patricia Nash, the St. Louis University School of Medicine, 314/577-8365.

26 to 27 - ***St. Louis*****: Advanced Trauma Life Support Course.** 16 credit hours. Contact Mary Keegan, R.N., St. Louis University, 314/577-8365.

26 to 28 - ***Tan-Tar-A, Osage Beach*****: Fifth Annual Conference - Mental Health and Aging: Special Needs Population.** 14 credit hours. Contact Jane Colt, St. Louis University School of Medicine, 577-8726.

30 - ***Hong Kong*****: Glucocorticoid-Incuced Bone Loss Mini-Symposium: Osteoporosis and Consensus Development Conference-Hong Kong.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

31 to April 2 - ***St. Louis*****: Noninvasive Diagnosis of Vascular Disease Symposium.** Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

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THE EMERGENCY MEDICINE INSTITUTE is sponsoring a unique seminar for Emergency Department physicians, nurses and administrators. The one-day training program, "Successful Customer Relations for Emergency Department Personnel" will be held in St. Louis, Missouri on March 23rd and 24th at the Airport Marriott Hotel. Learn how to enhance customer service and increase patient satisfaction in your Emergency Department. To register or for more information, contact Jennifer Behm at (216) 867-9980.

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PRAVACHOL® (Pravastatin Sodium Tablets)

CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and lactation. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia. Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See WARNINGS: Skeletal Muscle.

Antipyrine. Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol. Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine: The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin, antacids* (1 hour prior to PRAVACHOL), *cimetidine, nicotinic acid,* or *probucol,* no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p<0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p<0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p<0.05$). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area ($mg/meter^2$). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug.

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions. An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting.

Reproductive. gynecomastia, loss of libido, erectile dysfunction.

Eye. progression of cataracts (lens opacities), ophthalmoplegia.

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

(J4-422A)

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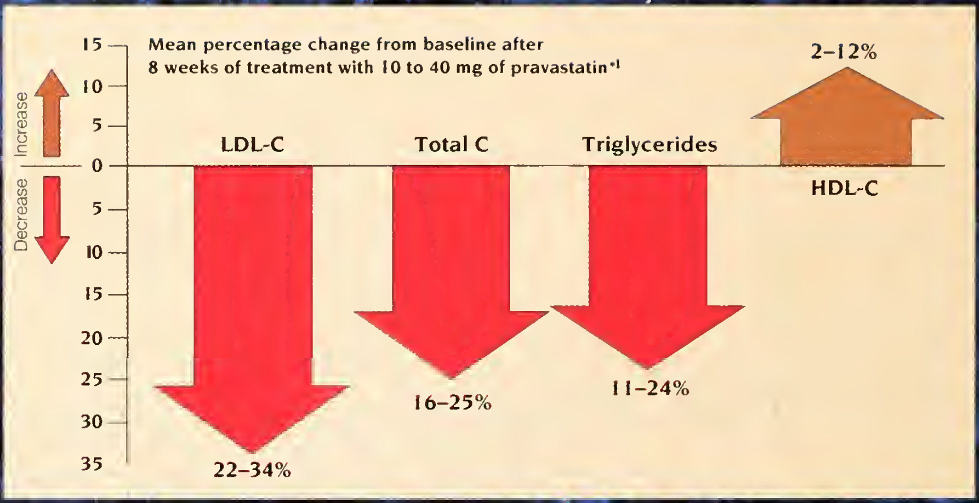
Mean percentage change from baseline after 8 weeks of treatment with 10 to 40 mg of pravastatin*[1]

*Each arrow represents a range of means derived from a single placebo-controlled study that included 55 patients treated with pravastatin.

PRAVACHOL® (pravastatin sodium) is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease *or* unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin.

Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

PRAVACHOL™
pravastatin sodium 20 mg tablets

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.

Bristol-Myers Squibb Company

Missouri Medicine

Journal of the Missouri State Medical Association March 1993

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Jordan W. Burkey, MD
Donald G. Sessions, MD
Wilfred E. Wooldridge, MD

MISSOURI STATE MEDICAL ASSOCIATION
Box 1028
113 Madison Street
Jefferson City, Missouri 65102
Phone: 314/636-5151
Fax: 314/636-8552
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MARCH COVER:

"Shakespeare in the Park"

Scott A. Turner, MD, a family physician in Osceola, Missouri, took this photograph while looking for a winter scene in the early spring of 1986. At the time he was a medical student at St. Louis University and had just received the camera as a birthday gift earlier that day. The statue is located in Tower Grove Park, St. Louis.

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Health Care Cost: Where to begin

by J. Regan Thomas, MD, Editor

With the new President and the change in Administration, the entire nation waits to see the impact on America's health care system. America's physicians echo a strong consensus: the changes must include a reassessment of the medical liability system.

The public is uncomfortable with many of the proposals for controlling escalating costs, but nearly all understand that malpractice suits are a significant contributory cause. Seventy-seven percent of Americans think malpractice lawsuits and awards are an important reason for rising health care cost according to a recent Gallup Poll. Over 60% of the population agrees with allowing a ceiling on "pain and suffering" awards in malpractice cases. Another survey reveals 61% believe doctors do too many tests out of fear of lawsuits in an exercise of defensive medicine.

Certain segments defending the present system of medical liability litigation tend to focus on identifying and disciplining the "bad doctors." The allegation that a few "bad doctors" are responsible for a disproportionate share of malpractice is simply not supported by the data. In fact, physicians with better credentials or more up-to-date training are often more likely to be sued and experience higher awards than those with less prestigious qualifications. A study quoted by the AMA concludes that these physicians may take on complicated cases that are more likely to result in bad outcomes. In the best of hands, problem outcomes can still develop and certainly all adverse medical events can not be avoided. Because our present system of litigation focuses on "fault" of the physicians, the implication is that all doctors in malpractice suits are "bad doctors." Claims against physicians however, overwhelmingly fail to correspond with the occurrence of negligent adverse events according to a 1990 study by Harvard University.

Seventy-eight percent of American physicians overall respond to this liability burden by ordering tests they might otherwise consider unnecessary. This cost-increasing defensive medicine practice was even higher (87%) with hospital based physicians. A direct response to medical care becoming more expensive is to make health insurance less affordable. Medical liability insurance also goes up and is passed on to the consumer. Nationwide, the cost of physicians' medical liability insurance tripled through the 1980s rising from $1.7 billion in 1982 to $5.6 billion a decade later. It's estimated that about 18% of the total expenditure for physicians' services was due to liability premiums and "defensive medicine." This all begs the question when evaluating the nation's health care costs, "can we afford the cost of medical liability?" The objective observer must answer, "no."

Medical liability and its cost also affects the other key concern in health care: patient access. Access is decreased as more physicians limit their medical practice in response to the liability climate. More than a half million residents of rural counties are without physicians who provide obstetric services. Sixty percent of family physicians omit obstetrics from their practice for liability-related reasons. The frequency of liability claims against physicians more than doubled in the 1980s. Now the average physician has a 38% chance of being sued for malpractice. Performing any kind of surgery will increase that possibility to over 50% and performing obstetrics increases the risk to 78%.

What is the answer? It must address the medical liability issues through tort reform. The AMA's medical liability project is an excellent guide for individual physicians as well as state and local groups in dealing with this issue and educating the public. The informational fact sheets on this project may be obtained by contacting the AMA. Without reform and action addressing this issue, this Administration will have no greater success controlling health costs than its predecessors.

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The Legislative Menu

by Carol Williams, MD, MSMA President

The 1993 session of the Missouri Legislature is in full swing, and numerous bills of interest to medicine have been introduced. There are too many to do justice to a discussion of them in a brief President's Message, so physicians are urged to familiarize themselves with bills of interest to them by reading *Progress Notes* and talking with their legislators and consulting with Tom Holloway and Cork Swarens, MSMA staff. An omnibus bill on health care costs and access, HB564, was introduced by House Speaker Bob Griffin and contains many provisions supported by MSMA. Senator James Matthewson has introduced a workers' compensation bill, SB251, based on recommendations of the State Business/Labor Advisory Committee. Senator Bob Johnson introduced a separate workers' compensation bill, SB 216, which sets a physician fee schedule based on the Medicare schedule. Both bills leave in force a provision of 1992 legislation which bars payment to health care providers until after the care has been finally adjudicated and settled.

Other bills introduced place limits on charges for copies of medical records, penalize those who make malicious reports on physicians to the Board of Healing Arts, require that physicians provide patients with a written estimate of costs for certain procedures done in hospitals, surgical centers, and physicians' offices, and that physicians post in their offices a list of regular charges for the ten most commonly performed procedures and services. A bill to license lay midwives has been introduced in both houses and reported "Do Pass" out of the House committee which heard it; MSMA continues its opposition to this bill.

There is both national and state interest in legislation which would curb referral of patients to facilities in which the referring physician has a financial investment that is high and ongoing. Because the issue is so important from an ethical standpoint and because of its impact on access to needed services, MSMA has had introduced HB397 which amends the medical practice act by adding language prohibiting "self-referral," in certain circumstances. Following the guidelines of the AMA Council on Ethical and Judicial Affairs, the bill prohibits physicians from referring patients to the health care facilities outside their office practices at which they do not provide direct services when they have an investment interest in the facility. The Board of Healing Arts may make an exception to this provision if there is a clear need for the facility and alternative financing is available. When a physician requests an exception to this part of the act, the Board shall consider the following:

1) Would the needed facility be built if referring physicians were prohibited from investing in the facility?

2) Is there another facility of reasonable quality in the community or is that facility the only one for patients to use?

3) Are other individuals who are not in a position to refer patients to the facility offered the same opportunity for investment and on the same terms as referring physicians? Past or expected volume of referrals or other business from physicians must not be in the terms offered to investing physicians.

4) There must be no requirement that physician investors make referrals to the facility.

5) There must be no differential marketing to physician investors.

6) The facility must not loan or guarantee loans to physicians who may refer patients to the facility.

7) The return on the physician's investment must be the basis of equity, not volume of referrals.

8) Investment contracts must not contain "non-competition" clauses.

9) Physicians must disclose their investment interest

Continued on page 114

Continued from page 113

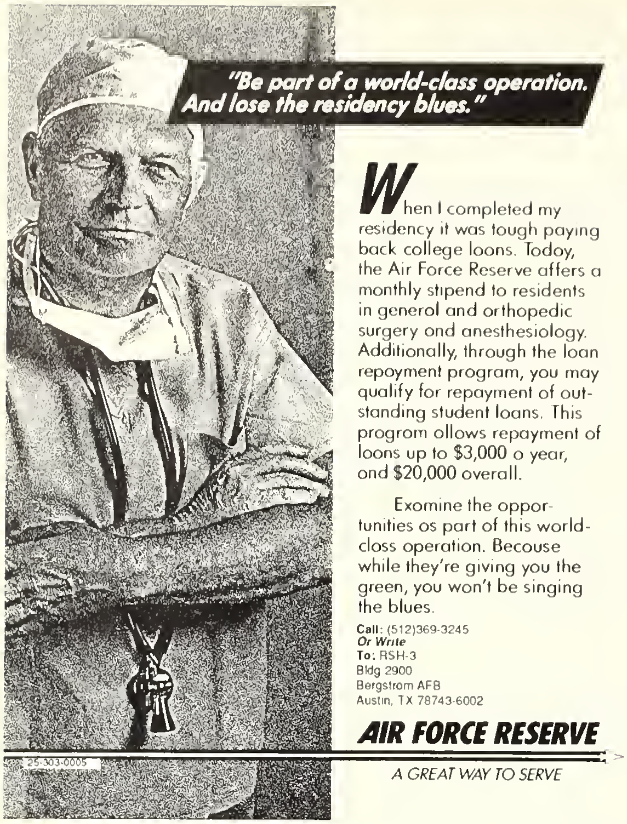
when referring patients to a facility.

10) Physicians should discloses ownership interest when requested to do so by third party payers.

11) Utilization review program must ensure that physicians do not over utilize the facility.

12) When the physician's financial interest is in severe conflict with the patient's interest, the physician must make alternative arrangements for the care of the patient unless there is a demonstrated need in the community for the facility. The finding of community need shall be reviewed every five years; When there no longer is a demonstrated need for the facility, the physician will have five years to divest of any investment interest in the facility.

There are plenty of bills in the legislature to absorb the interest of physicians from health system reform to business interests to licensing of lay individuals for activities traditionally in the purview of medicine. Become familiar with the legislative menu, then let your legislators know your thoughts on the bills under consideration. Your legislators always welcome phone calls, letters, and visits from their constituents; let them hear from you.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Dear Dr. Woerth,

Please advise me on the proper code for patients admitted to observation in a hospital. Are they coded as out-patients or in-patients? The hospital does not consider them to be in-patient admissions but the codes for office visits seem inappropriate.

Dr. F. B.

Dear Dr. F. B.,

There have been a series of new evaluation and management codes added to the 1992 CPT book. These codes are for hospital observation services and are called initial observation care codes. These codes will most likely be used for patients with a problem or problems of a highly severe nature that require observation in a hospital setting. If in one day a patient is "admitted" for observation status from emergency room, the medical office or a nursing home and all treatment was performed by the same physician, then the patient can only be billed for initial observation care. In other words, no insurance company will pay for an emergency room visit, office visit, or nursing home visit the same day initial observation care was provided unless the emergency room visit, office visit or nursing home visit was for treatment of a diagnosis other than the one used for the initial observation care.

The initial observation care codes can be used for either new or established patients. There are three levels for the codes and they are differentiated by the level of decision making that is required to treat the patient. Only the first level allows for less than a comprehensive history and examination. With the level one initial observation care code (99218) the physician can perform a detailed history and examination. There is no time factor associated with either of the three levels of initial observation care.

The initial observation care codes are not to be used for post-operative recovery when the patient is placed in an observation following a global surgical procedure (one that includes post-operative care). They would be appropriate for use when a patient is placed in an observation area of the hospital following the completion of a starred surgical procedure. (These are surgical procedures that do not include post-operative care.)

Dear Dr. Woerth,

I have a computer in my office and was wondering about your thoughts concerning computerized scheduling. Years ago, medical consultants used to advise against computerized scheduling. Is the advice still the same today?

Dr. I. D.

Dear Dr. I. D.,

Times change and so does the advice. Years ago there was concern that if a computer "went down" all scheduling could be lost and it would be impossible to schedule patient appointments during this down time. As you know having a computer, they rarely go down. If you back-up your computer files daily (this only takes a couple of minutes), you will not lose the appointments scheduled in the computer.

I encourage all my clients, with staff well-trained using computers, to use the computer for patient scheduling. It is much more efficient than an appointment book and makes scheduling for multi-physician practices much easier. The computer is able to print the schedule daily and easily makes scheduling revisions. This saves time that staff spend typing and revising schedules. The computer also saves staff time spent searching through the appointment book when patients call wanting to know when their appointment is "some time next month."

For physicians who like to routinely check the appointment book and monitor patient scheduling, I recommend that a computer terminal be conveniently placed for the physician's use.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, PhD
Practice Management
c/o *Missouri Medicine*
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
202/363-1780

Although your name will not be used in *Missouri Medicine*, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Correction: In February's Practice Management section, the second listing of the 45310-51 code (printed near the bottom of the page) should have read $190.30, not $109.30.

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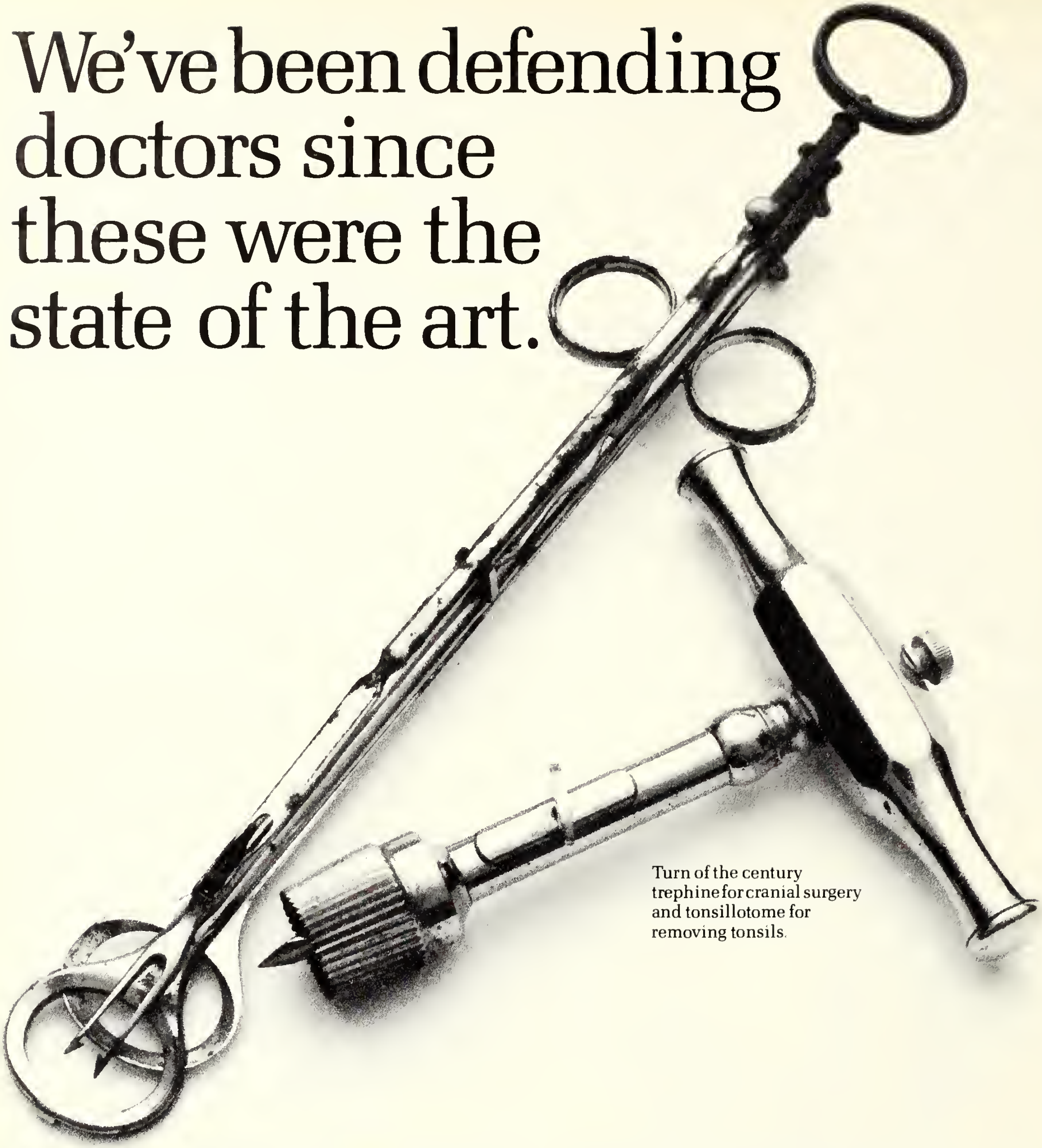

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A Doctors' Day Poem

by Donna Corrado, MSMAA Doctors' Day Chairman

It started in Georgia, 1933,
to honor the Doctors' ability
and how they mold their lifelong work
into a masterpiece.

For Dr. Long and anesthesia
they picked March 30 to try to please ya'
by serving others in your name
and for your sake.

An ongoing project of SMAA,
and a red carnation to simply say
"We recognize that you have given
of yourself to be a Doctor."

In 1954, a bronze loving cup was fitting
to bestow on the Auxiliary submitting
the best Doctors' Day observance
throughout the land.

And led by Missouri's own Janet Campbell
in 1990 there was a scramble
to pass a public law
establishing National Doctors' Day.

This law enables citizens across the nation
to publicly show their appreciation
for the role physicians play
in caring for the sick.

Advancing medical knowledge and promoting good health
are only a part of the fabulous wealth
the profession has given
to the world.

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or some act of kindness (if you catch my drift)
is demanded by us
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PATTERNS OF OBESITY IN MISSOURI

Donald J. Sharp, MD, DTM&H, Ross C. Brownson, PhD, Joan C. Wilkerson, BA
Jeannette Jackson-Thompson, PhD, MSPH, James R. Davis, PhD and Carol A. Smith, MSPH

Obesity is a major preventable health problem in Missouri and in the nation. Using survey data, we examined the prevalence of obesity in population subgroups and the overall trend. Prevalence of obesity was higher among blacks, middle-aged persons, and persons with less education or lower family income. Without additional attention, Missouri is unlikely to achieve the year 2000 objective of ≤20% prevalence of obesity.

Obesity continues to be a major preventable health problem in Missouri as well as the entire United States. High priority has been given to reducing the prevalence of obesity both in the state and in the national year 2000 objectives.[1,2] Based on data from the second National Health and Nutrition Examination Survey (NHANES II), an estimated 26% (about 34 million) of adult Americans ages 20-75 years were obese between 1976 and 1980.[3] NHANES II is the most recent national prevalence survey in which height and weight were measured and not self-reported.[4]

Epidemiologic and animal studies strongly suggest that the overall risk for disease and death increases with increasing obesity.[5-7] Morbid obesity (defined as being either 100% or 45.4 kg above ideal body weight) has been associated with a six- to 12-fold increase in mortality.[8] The prevalence of hypertension and noninsulin-dependent diabetes mellitus is three times higher among obese persons than among persons of normal weight.[9] Research has demonstrated a strong association between obesity and hypercholesterolemia and a probable association with coronary artery disease that is independent of other risk factors.[6,9-11] Obesity may also be associated with an increased risk of several types of cancer.[5,9,11]

In the United States in 1986, the economic cost of illness attributable to obesity was estimated to be $39.3 billion, or 5.5% of the total cost of illness.[12] In addition, Americans spend more than $30 billion annually on weight loss programs.[13,14]

In this article, we use the Behavioral Risk Factor Surveillance System (BRFSS) to report on the recent overall trend of obesity among Missouri adults and the prevalence of obesity among selected population subgroups.

METHODS

The BRFSS was developed by the Centers for Disease Control and Prevention to assist state health departments in the measurement of modifiable risk factors.[15,16] The BRFSS uses a random digit dialing technique[17] to select adult (≥18 years of age) Missourians and residents of other states for telephone interviews. The interviews are conducted monthly and participants give their weights and heights along with other information. Since Missouri began participation in the BRFSS, the yearly sample sizes in the state have ranged from 882 in 1986 to 1,512 in 1992. The total sample size over the 7-year period was 9,660.

We used the National Center for Health Statistics definition of obesity, which is based on the body mass index (BMI).[3] The BMI is calculated by dividing the reported weight (in kilograms) by the square of the reported height (in meters). Men were considered obese if their BMI was ≥27.8; women were considered obese if their BMI was ≥27.[3] This definition of obesity corresponds to a body weight 20% above the "ideal body weight" listed in the 1983 Metropolitan Life Tables of Recommended Weights.[3,18]

To examine the obesity prevalence in Missouri, we analyzed BRFSS data collected from January 1986 through December 1992. The data were weighted for the respondents probability of selection as well as to the age-, race-, and gender-specific population counts from the most recent Missouri census.[15,19] SUDAAN, a program for analyzing complex survey data, was used to produce the standard errors of the prevalence estimates.[20] We performed linear regression analysis on weighted prevalence estimates to determine significance of the trend. SAS software[21,22] was used to calculate Z-scores that were compared with a table of the normal distribution to test the statistical significance of the differences between prevalence values in different subgroups. A two-tailed p-value of ≤0.05 was considered statistically significant.

RESULTS

The prevalence of obesity was higher among persons with only a high school education or less (27%) compared with those having at least a college education (18%, p<0.001). Individuals with family incomes less than or equal to $20,000 (27%) were more likely to be obese than those with family incomes over $20,000 (23%, p<0.001). The prevalence of obesity was 26% in rural communities (those with populations less than 50,000), 24% in urban communities (Kansas City, St. Louis City, and St. Louis County), and 23% in metropolitan areas (all other communities with populations over 50,000). However, the only statistically significant difference appeared between the prevalence of obesity in rural communities compared with metropolitan communities (p=0.01).

Figure 1 demonstrates the variation in distribution of obesity by gender and race. For both genders combined, blacks were significantly more likely to be obese than whites (p<0.001). The prevalence of obesity among black females was higher than among white females (p<0.001). The higher prevalence among black males compared with white males was not statistically significant (p=0.52).

Figure 2 shows that the prevalence of obesity increased with age for both blacks and whites and declined slightly in the oldest age groups. The prevalence of obesity in each age group was higher for blacks than for whites but this difference was statistically significant only for the age groups 35-44 years (p=0.014), 45-54 years (p=0.004), and ≥65 years (p=0.006).

Figure 3 illustrates the increasing trend over time for the overall prevalence of obesity among Missouri adults (p=0.006). The prevalence varied from a low of 19% for 1989 to a high of 27% for 1992. The mean prevalence of obesity over the 7-year period was 24%. When stratified by age group, a statistically significant increasing trend in the prevalence of obesity was found in all age groups except ≥65 years.

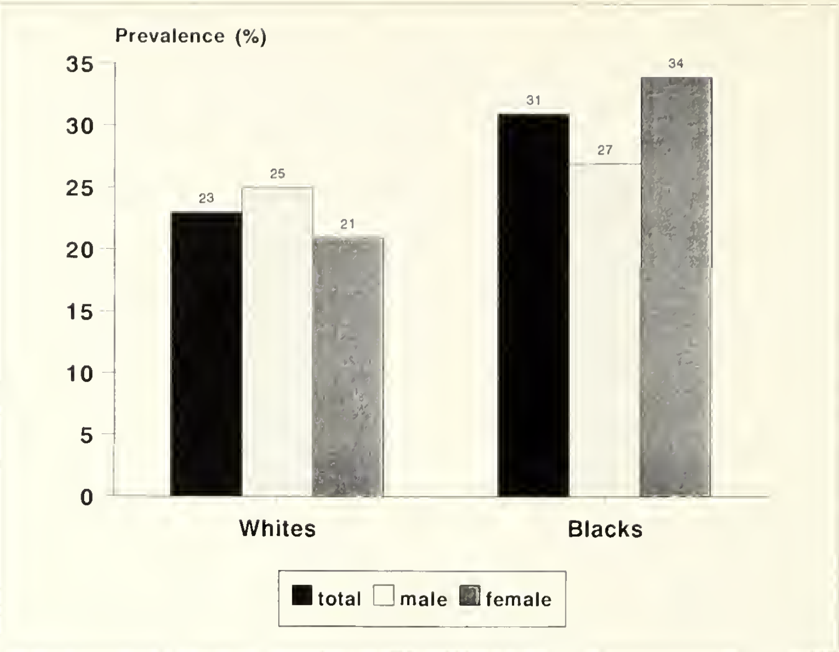

Figure 1. Prevalence of obesity by race and gender among Missouri adults (1986-92 aggregated data, n=9660). Numbers above the bars represent the prevalence in percent.

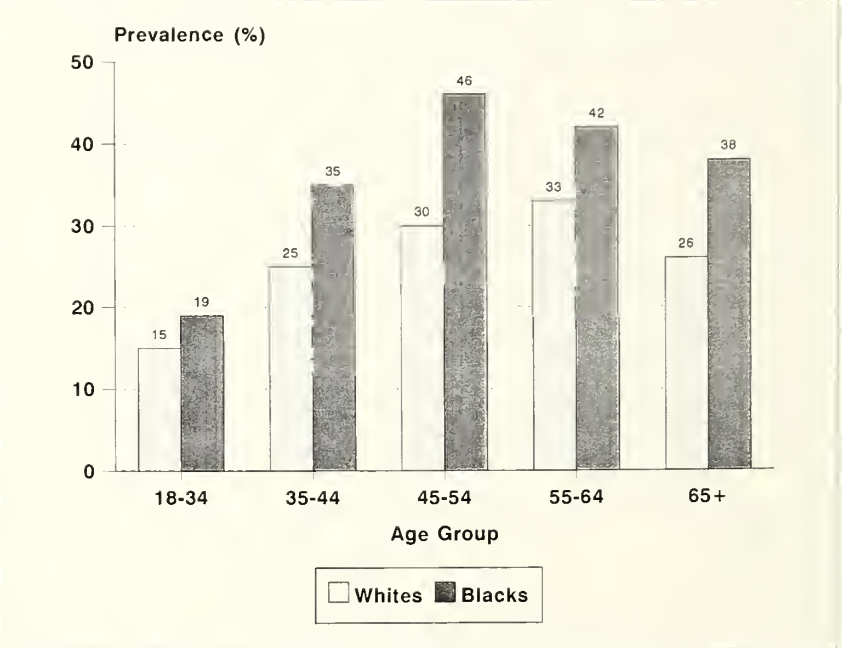

Figure 2. Prevalence of obesity by age group and race among Missouri adults (1986-92 aggregated data, n=9660). Numbers above bars represent the prevalence in percent.

DISCUSSION

Our results are similar to national data that found an increased risk of obesity for blacks (particularly among black women), middle-aged persons, and persons with less education or lower family income.[4,23-26] Two recent studies (one from Hawaii and one from Utah) using state BRFSS data, found an increasing trend in the prevalence of obesity.[27,28] The increasing prevalence of obesity in Missouri does not appear to be due to the effects of an aging population.

Our demonstration of this increasing trend in Missouri underscores the need for more prevention and treatment interventions to meet state and national objectives. These interventions need to be practical, affordable, safe, and effective. Because the long-term success rates found in the treatment of adult obesity are usually low,[7,13,29] prevention of obesity should be given high priority.[1,2,7,16,30] To maximize cost-effectiveness, obesity prevention resources

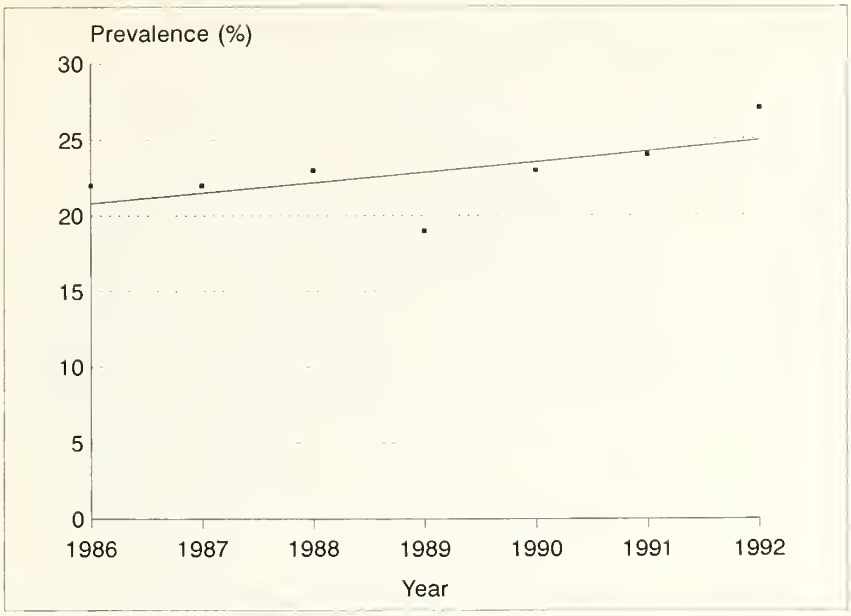

Figure 3. Prevalence (%) of obesity by year among Missouri adults (1986-92) including the estimated linear regression line.

should be targeted toward groups at highest risk.[11,30]

There is ample evidence to support the philosophy that obesity prevention activities should not wait until adulthood.[16,30,31] The prevalence of obesity in children and adolescents appears to be increasing[32] and approximately 70%- 80% of obese adolescents become obese adults.[33] Also, one study suggests that in certain weight loss programs with strong parental support, obese children may have better long-term success rates than adults.[31]

Although no national prevention programs exist that specifically target obesity, a state project is being conducted in Missouri that may influence local obesity prevalence. The Bootheel Heart Health Project is a pilot cardiovascular risk factor reduction program that has targeted the high-risk black population in six southeast counties since 1991.[34] One of the stated objectives of the project is prevention of obesity by means of group exercise and nutrition education activities organized by community-based coalitions. Both children and adults participate in these activities.

Despite the cost-effectiveness of physician counseling for chronic disease risk reduction[35,36] and national recommendations[2,11] less than half (44%) of obese persons in Missouri reported that physicians advised them to lose weight.[37] A stronger emphasis on reimbursement for prevention services (*e.g.*, counseling for weight reduction) would be an incentive for providers to increase activities in chronic disease risk reduction.

With motivated patients, clinicians have opportunities for interventions that may result in maintenance of weight reduction over the long term. An additional report suggests that health- care providers: 1) help the patient form a realistic view of his or her weight; 2) provide an assessment of the health risk caused by the patient's obesity; 3) obtain the patient's eating, exercise, and family history; 4) perform a physical examination; 5) assist the patient in selecting a weight loss plan; and 6) arrange follow-up visits.[38] Additionally, the U.S. Preventive Services Task Force report: *Guide to Clinical Preventive Services*[11] includes an excellent summary chapter on obesity intervention as well as chapters on exercise and nutrition counseling.

Our study is limited by the self-reported nature of the data collected through the BRFSS. Because the BRFSS relies on telephone interviews, it underrepresents high-risk groups who have lower phone coverage, and thereby underestimates the prevalence of some risk factors.[15,16,19] Several studies that compared self-reported data with measured data found that men tend to overestimate their height and women tend to underestimate their weight.[39-41] This reporting bias produces a slight underestimate of the prevalence of obesity.[40,41]

Unless dramatic changes occur in current trends, Missouri will not achieve the year 2000 objective of $\leq$20% prevalence of obesity. Physicians can play an increasingly active role in achieving this objective, which may thereby decrease the burden of several important chronic diseases.

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The Authors

Ross C. Brownson, PhD, Joan C. Wilkerson, BA, Jeannette Jackson-Thompson, PhD, MSPH, James R. Davis, PhD, and Carol A. Smith, MSPH, are with the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, 201 Business Loop 70 West, Columbia, MO 65203; Tel. (314) 876-3200; FAX (314) 443-3592. Donald J. Sharp, MD, DTM&H, is with this division and the Centers for Disease Control and Prevention, Atlanta, GA.

Reprint requests to:
Donald J. Sharp, MD
Missouri Department of Health
201 Business Loop 70 West
Columbia, MO 65203

Breast of chicken

3-oz. cooked serving of chicken breast

Today's Pork: Compare it to chicken for a healthy surprise

You may not have considered pork to be a healthy choice for your patients on fat-modified diets. But today's fresh pork compares surprisingly well to chicken in total fat, saturated fat, cholesterol, and calories.[1,2*]

	Calories	Total Fat	Saturated Fatty Acids	Cholesterol
Chicken Breast, skinless	140	3.0 g	0.9 g	72 mg
Pork Tenderloin, trimmed	139	4.1 g	1.4 g	67 mg
Pork Top Loin Roast (boneless), trimmed	165	6.1 g	2.2 g	66 mg
Center Loin Chop, trimmed	172	6.9 g	2.5 g	70 mg
Chicken Thigh, skinless	178	9.2 g	2.6 g	81 mg

*Table refers to 3-oz. cooked servings.

Missouri Pork Producers Association
Route 11, 6235 Cunningham Drive
Columbia, Missouri 65202-9162
(314) 445-8375

Best of pork

3-oz. cooked serving of pork tenderloin

New study: Pork is now 31% leaner

Pork is leaner today because of significant changes made in breeding and feeding techniques. According to new 1991 official USDA data, fresh pork sold today contains an average of 31% less fat after cooking and trimming than the same pork cuts reported in 1983.[1]

Today's pork fits well within the dietary guidelines recommended by both the American Heart Association and the National Cholesterol Education Program. Here's some advice to help patients on low-fat diets enjoy the variety, extra taste, and versatility of pork:

- Choose the leanest cuts. Shop for cuts with "loin" in the name.
- Trim away any visible fat.
- Keep portions moderate (about 3 oz, cooked).
- Prepare by broiling or roasting, and avoid additional fat in preparation.

1. US Dept of Agriculture. *Composition of Foods: Pork Products*, 1991. Agricultural handbook 8-10.
2. US Dept of Agriculture. *Composition of Foods: Poultry Products*, 1979. Agricultural handbook 8-5.

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D

DULLE & ASSOCIATES, P.C.
CERTIFIED PUBLIC ACCOUNTANTS

Management Letter

To the Council of Missouri State Medical Association:

In planning and performing our audit of the Financial Statements of Missouri State Medical Association for the years ended December 31, 1992 and 1991, we considered its internal control structure in order to determine our auditing procedures for the purpose of expressing our opinion on the Financial Statements and not to provide assurance on the internal control structure. We noted no matters involving the internal control structure and operations that we consider to be reportable conditions under standards established by the American Institute of Certified Public Accountants. Reportable conditions involve matters coming to our attention relating to significant deficiencies in the design or operations of the internal control structure that, in our judge- ment, could adversely affect Missouri State Medical Association's ability to record, process, summarize, and report financial data consistent with the assertions of management in the Financial Statements.

A material weakness is a reportable condition in which the design or operation of one or more of the internal control structure elements does not reduce, to a relatively low level, the risk of errors or irregularities in amounts that would be material in relation to the Financial Statements being audited may occur and not be detected within a timely period by employees in the normal course of work performing their assigned functions.

Our consideration of the internal control structure would not necessarily disclose all matters in the internal control structure that might be reportable conditions and, accordingly, would not necessarily disclose all reportable conditions that are also considered to be material weaknesses as defined above. No reportable conditions as described above were found.

This report is intended solely for the information and use of Missouri State Medical Association, management, and others within the Organization.

DULLE & ASSOCIATES, P.C.
Certified Public Accountants
January 22, 1993

Audit Report

To the Council of Missouri State Medical Association:

We have audited the accompanying Balance Sheets of Missouri State Medical Association as of December 31, 1992 and 1991, and the related Statements of Revenues, Expenses and Changes in Members' Equity and Cash Flows for the years then ended. These Financial Statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these Financial Statements based on our audit.

We did not examine the Financial Statements of MOMED Holding Company at December 31, 1992 and 1991. These Financial Statements were audited by another firm.

These Financial Statements are not in accordance with Generally Accepted Accounting Principles which require investments in the subsidiary and the affiliate to be consolidated with the controlling entity.

We conducted our audit in accordance with Generally Accepted Auditing Standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Financial Statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Financial Statements. An audit also includes assessing the accounting principles used, and significant estimates made by management, as well as evaluating the overall Financial Statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, except for the above comments, the Financial Statements referred to above present fairly, in all material respects, the financial position of Missouri State Medical Association as of December 31, 1992, and 1991, and the results of their operations and its cash flows for the years then ended in conformity with Generally Accepted Accounting Principles.

Our audit was made for the purposes of forming an opinion on the basic Financial Statements taken as a whole. The schedule of selected expenses for the years ended December 31, 1992 and 1991 is presented for purposes of additional analysis and is not a required part of the basic Financial Statements. Such information has been subjected to the audit-ing procedures applied in the audit of the basic Financial Statements and, in our opinion, is fairly stated in all material respects in relation to the basic Financial Statements taken as a whole.

DULLE & ASSOCIATES, P.C.
Certified Public Accountants
January 22, 1993

MISSOURI STATE MEDICAL ASSOCIATION
BALANCE SHEETS
For the Years Ended December 31, 1992 and 1991

ASSETS	1992	1991
CURRENT ASSETS		
Cash and CashInvestments (Note 2)	$1,427,798	$1,329,879
Marketable Securities (Note 3)	1,036,872	997,166
AccountsReceivable	22,322	11,329
Other CurrentAssets	3,681	231
Total Current Assets	2,490,673	2,338,605
INVESTMENTS		
Common Stock of MSMI, Inc., a 100% owned unconsolidated Subsidiary, at cost plus equity in undistributed net income (Note 4)	33,215	35,403
Common Stock of MOMED Holding Company, 10.8% owned Affiliate, lower of cost or market (Note 5)	169,295	169,295
Total Investments	202,510	204,698
LAND, BUILDING AND EQUIPMENT (Note 6)	568,406	605,555
OTHER ASSETS		
Cash Surrender Value - Insurance	68,578	61,071
TOTAL ASSETS	$3,330,167	$3,209,929
LIABILITIES AND MEMBERS' EQUITY		
CURRENT LIABILITIES		
Accounts Payable and Accrued Expenses	$3,958	$23,626
Due to the American Medical Association	179,882	169,845
Deferred Revenue	218,045	199,689
Total Current Liabilities	401,885	393,160
SUBORDINATED NOTES PAYABLE (Note 7)	590,781	590,781
DEFERRED COMPENSATION (Note 8)	60,195	53,841
Total Liabilities	1,052,861	1,037,782
MEMBERS' EQUITY	2,277,306	2,172,147
TOTAL LIABILITIES & MEMBERS' EQUITY	$3,330,167	$3,209,929

The Notes to Financial Statements are an integral part of these Statements.

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN MEMBERS' EQUITY
For the Years Ended December 31, 1992 and 1991

	1992	1991
REVENUES		
Dues	$1,258,429	$1,260,494
Subscriptions	17,534	17,431
Exhibit Rentals	40,931	15,225
Advertising	66,431	59,929
Commissions on Collections	10,937	22,100
Investment Income (Note 9)	229,415	109,131
Administrative Fees & Office Rent (Note 10)	43,263	48,233
Seminars and Workshops	47,036	59,635
Physicians Health Foundation (Note 11)	103,567	83,235
Other Revenue	34,360	29,450
Total Revenues	1,851,903	1,704,863
EXPENSES		
Salaries and Fringe Benefits	$ 764,010	$ 630,525
Office Expense	105,323	108,626
Travel Expense	9,981	10,970
Commissions and Committee Expense	7,892	5,139
Depreciation	49,091	48,306
MSMA Auxiliary	7,815	6,767
Journal Expense	136,720	120,783
Meeting Expense	215,167	217,597
Public Affairs	31,501	36,453
Consultant and Professional Fees	74,489	57,585
Public Relations Program	29,914	32,710
Student Awards	1,200	1,200
Tort Reform	30,678	10,817
Miscellaneous	5,108	9,982
Seminars and Workshops	60,742	64,981
Physicians Health Foundation (Note 11)	143,853	131,834
Insurance Survey	36,815	0
Medicaid Project	21,703	0
Medical Research Center	10,429	0
Contributions to Physicians Health Foundation	2,125	0
Total Expenses	1,744,556	1,494,275
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENSES BEFORE EQUITY IN NET INCOME OF INVESTMENTS	107,347	210,588
Equity in Subsidiary of MSMI, Inc. (Note 4)	(2,188)	13,643
Equity in Subsidiary of Missouri Medical Insurance Company (Note 5)	0	48,370
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENSES	105,159	272,601
MEMBERS' EQUITY, BEGINNING	2,172,147	1,893,203
Prior Period Adjustment (Note 3)	0	6,343
MEMBERS' EQUITY, ENDING	$2,277,306	$2,172,147

STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 1992 and 1991

	1992	1991
CASH FLOWS FROM OPERATING ACTIVITIES		
Net Income	$ 105,159	$ 272,601
Prior Period Adjustment	0	6,343
ADJUSTMENTS TO RECONCILE NET INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES		
Depreciation	$ 49,091	$ 48,306
(Increase) or Decrease to Accounts Receivables	(10,993)	(1,913)
(Increase) or Decrease in Other Current Assets	(3,450)	0
(Increase) or Decrease in Cash Surrender Value	(7,507)	(14,014)
Increase or (Decrease) in Accounts Payable	(19,668)	1,329
Increase or (Decrease) in Due to the AMA	10,037	38,708
Increase or (Decrease) in Due to the County Societies	0	(776)
Increase or (Decrease) in Deferred Revenue	18,356	36,183
Increase or (Decrease) in Deferred Compensation	6,354	6,148
Total Adjustments	42,220	113,971
Net Cash Provided by Operations	147,379	392,915
CASH FLOW FROM INVESTING ACTIVITIES		
(Increase) or Decrease in Marketable Securities	(39,706)	(431,089)
(Increase) or Decrease in MSMI, Inc. Investment	2,188	(13,643)
(Increase) or Decrease in Affiliate	0	(48,370)
Purchase of Equipment	(11,942)	0
Net Cash Used Investing	(49,460)	(493,102)
NET INCREASE OR (DECREASE) IN CASH	97,919	(100,187)
CASH AT BEGINNING OF YEAR	1,329,879	1,430,066
CASH AT END OF YEAR	$1,427,798	$1,329,879

The Notes to Financial Statements are an integral part of these Statements.

NOTES TO FINANCIAL STATEMENTS

For the Years Ended December 31, 1992 and 1991

Note 1. Summary of Significant Accounting Policies

Organization: The Missouri State Medical Association was incorporated as a not-for-profit corporation under the laws of the State of Missouri. The Internal Revenue Service has granted exemption under Code Section 501 (c)(6).

Basis of Accounting: The Financial Statements of the Missouri State Medical Association are prepared on the accrual basis of accounting.

Dues: Dues are assessed to members on a calendar-year basis. On December 31st of each year, members delinquent in payment of dues forfeit their memberships. The Association may also collect from members dues and assessments of the American Medical Association and County Medical Societies which are then forwarded to the respective organizations. The Association receives a fee for providing this service. Amounts received from members prior to January 1st of each year, which represents the subsequent year's dues, are recorded as Deferred Revenue.

Valuation of Accounts Receivable: Accounts receivable are stated at face amount with no allowance for doubtful accounts. An allowance for doubtful accounts is not considered necessary because probable uncollectible accounts are immaterial.

Marketable Securities: Investments in marketable equity securities are carried the lower of aggregate cost or market at the balance sheet date.

Property and Equipment: Property and equipment are carried at cost. Depreciation is computed by the straight-line method based on estimated useful lives of the related assets.

Income Taxes: The Association is exempt from Federal Income Taxes under the Internal Revenue Code Section 501 (c)(6). Any unrelated business income is subject to income tax.

Note 2. Cash and Cash Investments

The balance of cash and cash investments consisted of the following at December 31st:

	1992	1991
Petty Cash	$ 50	$ 50
Cash in Bank,		
Executive Secretary Account	5,819	9,426
Treasury Account	12,740	(15,821)
Physicians Rehab Program	0	2,125
Money Market Fund	102,960	149,099
Certificates of Deposit	985,000	1,185,000
Mutual Funds	321,229	0
TOTAL CASH	$1,427,798	$1,329,879

Note 3. Marketable Securities

Investments in marketable equity securities are carried at the lower of aggregate cost or market at the balance sheet date.

The following is a summary of marketable equity securities at December 31st:

	1992	1991
Aggregate Cost	$1,036,872	$ 997,166
Aggregate Market	1,166,038	1,218,856
UNREALIZED GAIN	$ 129,166	$ 221,690

Net realized gain of $126,661 and $15,514 on the sale of marketable equity securities were included in revenue for the years ended December 31, 1992 and 1991, respectively.

Note 4. Investments in Unconsolidated Subsidiary

The Association's investments in MSMI, Inc., a 100% owned unconsolidated subsidiary, is carried at cost ($2,000) plus equity in the undistributed net earnings since the date of acquisition. At December 31, 1992 and 1991, the investment in the subsidiary is carried at $33,215 and $35,403, respectively.

Condensed financial data relating to the subsidiary follows:

MSMI, INCORPORATED BALANCE SHEETS

	---December 31--- 1992	1991
ASSETS		
CURRENT ASSETS		
Cash, including Savings Account	$22,315	$23,808
Receivables	0	1,195
Total Current Assets	22,315	25,003

INVESTMENTS - COMMON STOCK	15,000	15,000
TOTAL ASSETS	$37,315	$40,003

LIABILITIES AND STOCKHOLDERS' EQUITY

CURRENT LIABILITIES		
Accounts Payable	$ 4,100	$ 4,600
STOCKHOLDERS' EQUITY		
Common Stock, $10 per value: 3000 shares authorized; 200 shares issued and outstanding	2,000	2,000
Retained Earnings	31,215	33,403
Total Stockholders' Equity	33,215	35,403
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	$37,315	$40,003

STATEMENT OF INCOME AND EXPENSES

Income	$ 4,093	$23,095
Expenses	6,281	9,452
NET INCOME	$(2,188)	$13,643

Note 5. Investment of Affiliate
The Association exercises significant management control over its affiliate, MOMED Holding Company, owner of Missouri Medical Insurance Company (MOMEDICO), a mono-line Medical Professional Liability Insurance Company founded and sponsored by the Association.

At December 31, 1992 and 1991, ownership was:

Total Ownership	Shares Outstanding		Votes per Share	Votes
Class A C/S - $1 PAR	222,343	x	1	222,343
Class B C/S - $25 PAR	24,185	x	15	362,775
TOTAL VOTES				585,118
MSMI, Inc. (wholly owned subsidiary of Missouri State Medical Association) ownership:				
Class A C/S - $ PAR	4,000	x	1	4,000
Missouri State Medical Association ownership:				
Class B C/S - $25 PAR	24,185	x	15	362,775

Combined Ownership = 11.43%
Combined Voting Rights = 62.68%

This investment is carried at the lower of cost or market. Original cost is $322,775 with market value at both December 31, 1992 and 1991 of $169,295.

Most recently available condensed financial data relating to the subsidiary follows:

CONSOLIDATED BALANCE SHEETS	1991	1990
Investments	$54,568,267	$46,807,860
Other Assets	3,353,563	3,068,106
TOTAL ASSETS	$57,921,830	$49,875,966
Reserve for Losses and Loss Adjustment Expense	$35,515,048	$32,368,926
Other Liabilities	13,236,782	11,587,589
Total Liabilities	48,751,830	43,956,515
STOCKHOLDERS' EQUITY	9,170,000	5,919,451
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	$57,921,830	$49,875,966
CONSOLIDATED STATEMENT OF OPERATIONS		
Revenues	$17,173,171	$15,088,607
Expenses	12,757,926	10,013,789
TOTAL	4 ,415,245	5,074,818
PROVISION FOR FEDERAL INCOME TAX	1,121,283	1,631,991
EARNINGS (LOSS) BEFORE EXTRA ORDINARY ITEM	3,293,962	3,442,827
NET EARNINGS	$ 3,293,962	$ 3,442,827

Note 6. Land, Building and Equipment
Consists of the following at December 31st (at Cost):

	1992	1991
Land	$ 83,000	$ 83,000
Building	581,704	581,704
Furniture and Equipment	305,374	293,432
Total	970,078	958,136
LESS: Accumulated Depreciation	401,672	352,581
TOTAL LAND, BUILDING & EQUIPMENT	$ 568,406	$ 605,555

Note 7. Subordinated Notes Payable
In 1978, the Association formed a wholly-owned subsidiary, MOMEDICO, to provide professional liability and premises liability insurance for physicians and support technicians practicing in the State of Missouri. Before obtaining professional liability insurance through MOMEDICO, physicians residing in the State of Missouri were required to subscribe to non-interest bearing subordinated notes based upon the physician's underwriting classification. These notes were issued by the Association and the subscriptions were payable over a three-year period.

The Association was the sole stockholder of MOMEDICO prior to public stock offering of MOMEDICO in 1980. At that time, the requirement to purchase subordinated notes was eliminated with new policies effective after January 31, 1980.

In connection with the public stock offering in 1980, MOMEDICO assumed, in exchange for 100,815 of the 125,000 shares of the Class B common stock the Association held in MOMEDICO, the face value of the subordinated notes issued and outstanding. MOMEDICO also assumed the balance of the installments receivable on the subordinated notes and a bank note payable from the Association. Under an exchange offer made by MOMEDICO, holders of the Association's subordinated note could exchange fully paid notes for Class A common stock at the rate of $20 face value per share.

On October 15, 1980, the Association reassumed all notes not exchanged and also the installments receivable on the unexchanged notes as well as an amount equal to the installments receivable of the bank note payable.

The notes requiring repayment only upon the Association's accumulation of in excess of $3,000,000 of Members' Equity at the end of any calendar year, that the Association has sufficient funds and assets, exclusive of the amount subject to repayment, be approved by the Council of the Association. Interest may be paid on the notes, but it is at the discretion of the Council of the Administration.

Redemption of the notes ar provided for in the event of death, disability, retirement of the holder, or if the holder has moved both his person and his practice out of the State of Missouri. However, redemption for such causes may be delayed or refused if the Council determines the Association is not on a financially reasonable basis to make such redemptions.

At both December 31, 1992 and 1991, the balance for the subordinated notes payable was $590,781. This amount reflects the face value of the notes reassumed by the Association on October 15, 1980, less the installments receivable on the outstanding notes, and less all redemptions made from 1981 through 1985. In 1985, the Council of the Administration placed a moratorium on the redemption of the subordinated notes.

Note 8. Deferred Compensation Plan
The Association entered into a deferred compensation agreement with its Executive Vice-President on December 31, 1980 which provides for payments upon retirement, death or disability. The agreement also stipulates that a pro-rata settlement of benefits will be made in the event

of voluntary termination of employment with the Association once five years of service is completed after the agreement becomes effective. A similar agreement was enacted May 1, 1990 between the Executive Director and the Association. Both agreements are funded through insurance policies.

At December 31, 1992 and 1991, the Association's liability under the terms of these agreements were $60,195 and $53,841, respectively with the underlying cash surrender value of life insurance being $68,577.53 and $61,071, respectively.

On December 17, 1989, the Association adopted a Deferred Compensation Plan for employees pursuant to Internal Revenue Service Code Section 457. Virtually all employees are covered by the Plan. Within Internal Revenue Service guidelines, participants may elect to defer a portion of their income until retirement. Funds invested for these purposes amounted to $55,821 and $34,521 as of December 31, 1992 and 1991, respectively.

Note 9. Investment Income

The following is a summary of investment income for the years ended December 31st:

	1992	1991
Interest on Cash Investments	$ 47,907	$ 83,470
Interest on Notes Receivable	0	0
Dividends	54,846	10,146
Realized Gain or (Loss) on the Sale of Marketable Equity Securities	126,662	15,514
TOTAL INVESTMENT INCOME	$229,415	$109,130

Note 10. Related Party Transactions

The Association provides administrative services to MSMI, Inc., (a wholly-owned subsidiary) and Missouri State Medical Foundation (an affiliate). For providing these services, the Association receives an annual fee from each of the two organizations. For the years ended December 31, 1992 and 1991, the administrative fee assessed Missouri State Medical Foundation was $15,000 and $10,000, and the administrative fee assessed MSMI, Inc., was $4,100 and $4,600, respectively.

Note 11. Physicians Rehabilitation Program

In 1986, the Association established a Physicians Rehabilitation Program, the purpose of which is to motivate impaired physicians to voluntarily enter into treatment and to provide such a treatment program.

Funding for the program is provided by fees assessed to participants as well as from donations received from supportive individuals and organizations.

During 1992, the Missouri State Medical Association Physicians Health Foundation was separately incorporated. For the year ended December 31, 1992, the Association received as income $103,567 from the Physicians Health Foundation and, in turn, paid expenses of $143,853. The resulting difference of $40,286 is considered an in-kind contribution to the Physicians Health Foundation.

Note 12. Pension Plan

The Association maintains a non-contributory defined benefit pension plan covering substantially all of its employees. Established April 1, 1959, the Plan has a March 31st year end. Eligibility requirements include a minimum of 12 service months and a minimum age of 21. Normal retirement age is 65 with provision for pro-rata benefits prior to 65. Vesting is scheduled over six years of covered service. The Individual Aggregate Actuarial Cost Method is used as the basis for the funding standard account computation. At March 31, 1992, the most recently available actuarial information, fair value of plan assets was $795,930 ($701,429 in 1991). Total benefit obligation was $518,971 ($485,510 in 1991) with a vested benefit obligation of $518,279 ($484,214 in 1991). Employer contributions for FYE March 31, 1992 was $48,896 ($41,189 in 1991). Additional Plan income was $97,062 ($99,110 in 1991) with expenses of $2,561 ($10,417 in 1991) and benefits paid in the amount of $2,400 ($10,281 in 1991), and net income for the Plan year was $94,501 ($88,693 in 1991). There was no unconditional liability for any unfunded accumulated benefit obligation plus any prepaid pension cost, nor unfunded accumulated benefit obligation reduced by any unfunded accumulated benefit obligation reduced by any unfunded accrued pension cost. Assets are invested primarily in government securities and corporate stocks and bonds.

Net periodic pension cost of $49,330 ($41,189 in 1991) was composed of employer's normal cost of $45,137 ($37,655 in 1991), amortization charge of $233 ($233 in 1991) and interest of $3,960 ($3,310 in 1991).

ACCOMPANYING INFORMATION

SCHEDULE OF SELECTED EXPENSES

For the Years Ended December 31, 1992 and 1991

SALARIES AND FRINGE BENEFITS	1992	1991
Salaries	$541,884	$477,024
Payroll Taxes	42,941	37,494
Employees Life & Disability Insurance	10,557	3,686
Employees Hospitalization Insurance	70,030	48,014
Employees Pension Plan Contribution	67,298	41,507
Deferred Compensation Plan Expense	31,300	22,800
TOTAL SALARIES & FRINGE BENEFITS	$764,010	$630,525
OFFICE EXPENSES		
Occupancy Expense	$ 17,083	$ 18,725
Office Supplies	28,134	22,611
Computer Expense	1,003	11,556
Postage	11,835	17,182
Telephone	12,585	14,101
Insurance	1,507	4,975
General Expense	(316)	(12,590)
Taxes, Real Estate	5,070	4,893
Custodian Fee	12,336	10,017
Equipment Rental and Repair	6,739	7,531
Dues and Directories	9,347	9,625
TOTAL OFFICE EXPENSES	$105,323	$108,626
COMMISSIONS AND COMMITTEES EXPENSES		
Commissions:		
Commission on Medical Economics, Third Party Medicine & Governmental Relations	$ 544	$ 163
Commission on CME	7,850	3,819
Commission on Interspeciality Medicine	(502)	253
Commission on Medical - Legal Affairs	0	98
TOTAL COMMISSIONS EXPENSES	$ 7,892	$ 4,333
Committees:		
Committee on Legislative Affairs	$ 0	$ 806
Total Committee Expenses	0	806
TOTAL COMMISSIONS & COMMITTEE EXPENSES	$ 7,892	$ 5,139
MEETING EXPENSES		
Meetings:		
Annual Session	$ 87,965	$ 78,708
Council	51,851	46,861
AMA Delegates' Expenses	70,218	82,926
Resident Physicians Section	0	1,135
Student Section	1,378	2,413
Discretionary Council Fund	2,053	1,116
Hospital Medical Staff	1,702	4,438
TOTAL MEETING EXPENSES	$215,167	$217,597

D

DULLE & ASSOCIATES, P.C.
CERTIFIED PUBLIC ACCOUNTANTS

Management Letter

To the Board of Directors of
Missouri State Medical Foundation:

In planning and performing our audit of the Financial Statements of Missouri State Medical Foundation for the year ended December 31, 1992, we considered its internal control structure in order to determine our auditing procedures for the purpose of expressing our opinion on the Financial Statements and not to provide assurance on the internal control structure. We noted no matters involving the internal control structure and operations that we consider to be reportable conditions under standards established by the American Institute of Certified Public Accountants. Reportable conditions involve matters coming to our attention relating to significant deficiencies in the design or operations of the internal control structure that, in our judge- ment, could adversely affect Missouri State Medical Foundation's ability to record, process, summarize, and report financial data consistent with the assertions of management in the Financial Statements.

A material weakness is a reportable condition in which the design or operation of one or more of the internal control structure elements does not reduce, to a relatively low level, the risk of errors or irregularities in amounts that would be material in relation to the Financial Statements being audited may occur and not be detected within a timely period by employees in the normal course of work performing their assigned functions.

Our consideration of the internal control structure would not necessarily disclose all matters in the internal control structure that might be reportable conditions and, accordingly, would not necessarily disclose all reportable conditions that are also considered to be material weaknesses as defined above. No reportable conditions as described above were found.

This report is intended solely for the information and use of Missouri State Medical Foundation, management, and others within the Foundation.

DULLE & ASSOCIATES, P.C.
Certified Public Accountants

January 22, 1993

Audit Report

To the Board of Directors of
Missouri State Medical Foundation:

We have audited the accompanying Statement of Assets and Fund Balance - Modified Cash Basis of Missouri State Medical Foundation as of December 31, 1992 and the related Statement of Revenues, Expenses and Changes in Fund Balance - Modified Cash Basis for the year then ended. These Financial Statements are the responsibility of the Foundation's management. Our responsibility is to express an opinion on these Financial Statements based on our audit.

We conducted our audit in accordance with Generally Accepted Auditing Standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Financial Statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Financial Statements. An audit also includes assessing the accounting principles used, and significant estimates made by management, as well as evaluating the overall Financial Statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As described in Note 1, these Financial Statements were prepared on the Modified Cash Basis of Accounting, which is a comprehensive basis of accounting other than Generally Accepted Accounting Principles.

In our opinion, except for the above comments, the Financial Statements referred to above present fairly, in all material respects, the financial position of Missouri State Medical Foundation as of December 31, 1992, and the results of their operations and its cash flows for the year then ended on the basis of accounting described in Note 1.

DULLE & ASSOCIATES, P.C.
Certified Public Accountants

January 22, 1993

MISSOURI STATE MEDICAL FOUNDATION

STATEMENT OF ASSETS AND FUND BALANCE - MODIFIED CASH BASIS

For the Year Ended December 31, 1992

ASSETS

CURRENT ASSETS	
Cash (Note 2)	$ 147,639
Investments (Note 3)	671,167
Loans Receivable, Current (Note 4)	175,000
Total Current Assets	993,806
LONG-TERM ASSETS	
Loans Receivable, Long-term (Note 4)	1,427,644
Total Long-term Assets	1,427,644
TOTAL ASSETS	$2,421,450
FUND BALANCE	$2,421,450

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND BALANCE -MODIFIED CASH BASIS

For the Year Ended December 31, 1992

REVENUES	
Interest on Student Loans	$ 73,397
Investment Income	42,521
Contributions	4,369
Gain on Sales of Securities	9,468
Recovery of Loans Written Off	3,211
Total Revenues	132,966
EXPENSES	
Administrative	$ 15,000
Professional Fees	21,230
Printing and Meeting	725
Provision for Loan Losses	11,867
Miscellaneous	1,454
Total Expenses	50,276
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENSES	82,690
FUND BALANCE, BEGINNING	2,338,760
FUND BALANCE, ENDING	$2,421,450

The Notes to Financial Statements are an integral part of these Statements.

NOTES TO FINANCIAL STATEMENTS

For the Year Ended December 31, 1992

Note 1. Summary of Significant Accounting Policies

Organization: Missouri State Medical Foundation was organized in 1961 for the purpose of making low-interest loans to medical students.

Basis of Accounting: The accounts are maintained, and these Financial Statements are presented on, a Modified Cash Basis of Accounting. Under that basis, revenues are recognized when received rather than when earned, and expenses are recognized when paid rather than when incurred.

Investments: Investments are stated at the lower of aggregate cost or market at the balance sheet date.

Loans Receivable: Loans receivable are stated at face amount less an allowance for doubtful accounts of three percent of the loan balances at year end.

Equipment: Equipment is stated at cost less accumulated depreciation computed using the straight-line method over the estimated useful lives of the assets.

Income Taxes: The Foundation is qualified as an exempt organization under Section 501 (c)(3) of the Internal Revenue Code and is not subject to Federal or State Income Tax.

Note 2. Cash

Cash includes the following accounts:

Cash in Bank	$(13,290)
Money Market, Bank	73,684
Money Market, Prudential	87,245
TOTAL CASH	$147,639

Note 3. Investments

At December 31, 1992, the Foundation's portfolio of marketable securities consisted of securities with a cost of $671,167 and market value of $738,849. Gross unrealized gains on all marketable securities were $74,642, and gross unrealized losses were $6,960 for the year. Net realized gains included in revenues was $9,468. The costs of securities sold were determined on a specific share basis.

Note 4. Loans Receivable

The following is a summary of the transactions affecting the loans receivable account for the year:

Loans Receivable, 01/01/92	$1,361,259
New Loans	466,730
Principal Payments	(172,640)
Loans Written Off	(3,139)
LOAN RECEIVABLE, 12/31/92	$1,652,210
Allowance for Doubtful Accounts	
01/01/92	$ 40,838
Current Year Provision	11,867
Loans Written Off	(3,139)
ALLOWANCE FOR DOUBTFUL ACCOUNTS 12/31/92	$ 49,566

Note 5. Equipment

Equipment is fully depreciated at December 31, 1992. In past years, depreciation was determined on a straight-line basis.

Note 6. Related Party Transactions

The Foundation is assessed, by the Missouri State Medical Association, an annual fee for administrative cost. For the year ended December 31, 1992, the Foundation paid the Association $15,000 for administrative costs. The Foundation also reimburses the Missouri State Medical Association for expenses paid by the Association on behalf of the Foundation. This reimbursement for the year ended December 31, 1992 was $725 for printing and meeting expenses.

D
DULLE & ASSOCIATES, P.C.
CERTIFIED PUBLIC ACCOUNTANTS

To the Board of Directors of Missouri State Medical Association Physicians Health Foundation:

We have reviewed the accompanying Balance Sheet of Missouri State Medical Association Physicians Health Foundation as of December 31, 1992, and the related Statement of Revenues, Expenses and Changes in Fund Balance for the year then ended, in accordance with standards established by the American Institute of Certified Public Accountants. All information included in these Financial Statements is the representation of the management of the Foundation.

A review consists principally of inquiries of Foundation personnel and analytical procedures applied to financial data. It is substantially less in scope than an audit in accordance with Generally Accepted Auditing Standards, the objective of which is the expression of an opinion regarding the Financial Statements taken as a whole. Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying Financial Statements in order for them to be in conformity with Generally Accepted Accounting Principles.

DULLE & ASSOCIATES, P.C.
Certified Public Accountants

January 22, 1993

MISSOURI STATE MEDICAL ASSOCIATION PHYSICIANS HEALTH FOUNDATION

BALANCE SHEET

For the Year Ended December 31, 1992

ASSETS	
CURRENT ASSETS	
Cash	$800
TOTAL ASSETS	$800
FUND BALANCE	$800

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND BALANCE

For the Year Ended December 31, 1992

REVENUES	
Contributions, Cash	$ 78,023
Contributions, In-kind (MSMA)	40,286
Service Fees	23,655
Total Revenues	141,964

Statement of Revenues, Expenses and Changes In Fund Balance, cont.

EXPENSES	
Professional Services	$119,434
Voice-mail/Pager	736
Office Supplies	5,476
Travel Expense	7,450
Telephone	5,195
Office Rent	4,603
Miscellaneous	959
Bank Service Charge	408
Total Expenses	144,261
EXCESS (DEFICIENCY) REVENUES OVER EXPENSES	(2,297)
FUND BALANCE, BEGINNING	3,097
FUND BALANCE, ENDING	$ 800

The Notes to Financial Statements are an integral part of these Statements.

NOTES TO FINANCIAL STATEMENTS

For the Year Ended December 31, 1992

Note 1. Summary of Significant Accounting Policies

Organization:

Missouri State Medical Association Physicians Health Foundation was incorporated as a not-for-profit corporation under the laws of the State of Missouri on March 26, 1990.

The purpose of the Foundation is to support and promote quality professional healthcare through the sponsoring, supporting, initiating, funding and establishing of the rehabilitation of chemically-dependent or mentally-impaired physicians.

The Foundation is a supporting organization under Internal Revenue Code Section 509 (a)(3). As such, the Foundation has common officers with the Missouri State Medical Association, a Section 501 (c)(6) organization. In addition, the six officers and directors of the Foundation are also directors and members of the Executive Committee of Missouri State Medical Association.

Basis of Accounting:

The Financial Statements of Missouri State Medical Association Physicians Health Foundation are prepared on the accrual basis of accounting.

Income Taxes:

The Foundation is qualified as a exempt organization under Internal Revenue Code Section 501 (c)(3) and is not generally subject to Federal or State Income Tax.

Note 2. Revenues

The Foundation receives contributions from hospitals, physician groups, insurance companies and interested individuals. Additionally, the Missouri State Medical Association underwrites a significant portion of operating expenses. Fees are also charged, in a nominal amount, to service recipients.

"Without your help I simply could not have made it through medical school."

The Missouri State Medical Foundation - MSMF - was created by the Missouri State Medical Association for the express purpose of giving financial assistance to deserving young Missourians who will be tomorrow's doctors.

Send your check today to the Missouri State Medical Foundation, 113 Madison St., P.O. Box 1028, Jefferson City, MO 65101.

Help for the Impaired Physician

Through its Physicians' Health Committee, MSMA helps doctors who are suffering from alcoholism, other drug addiction, psychiatric disorders, or other illnesses that may impair a physician's judgement and ability to render care.

The goal of the program is to help, not punish. The Committee is made up of physicians who have special expertise in treating the impaired professional. Effective treatment for these illnesses is achieved most easily when the disease is detected early. Family, friends, and associates are urged not to avoid the issue or give misguided sympathy that enables the condition to deteriorate.

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This information was provided to us by Missouri's CLIA officials. They prepared this list to answer a number of common complaints they have received from physicians around the state. You may not agree with their presentation. Please call the CLIA office at 314/751-6318 if you wish to discuss these or other CLIA-related matters.

MYTH 1: I can perform only waived tests in my physician's lab.
FACT: You can perform all the tests you are now performing. Just apply for the appropriate certificate

MYTH 2: I don't have to be CLIA-certified if I don't make Medicare claims.
FACT: Any person or facility that performs lab tests on human specimens for health assessment must be CLIA-certified.

MYTH 3: CLIA fees are too high. I can't afford them.
FACT: CLIA fees are based on size and complexity of your laboratory.

MYTH 4: The rules are too strict for me. I have to quit doing the tests I've always done for my patients.
FACT: Anyone can comply with the rules, because there are different rules for different levels of testing.

MYTH 5: If I don't apply, nobody can find me.
FACT: When CLIA becomes fully effective, there will be stiff penalties for deliberate evasion of certification.

MYTH 6: The standards and controls required by CLIA are too expensive. I can't afford to run them.
FACT: CLIA requires only those standards and controls that assure tests are performed with precision and accuracy, usually no more than what the manufacturer requires.

MYTH 7: I will have to retype all manufacturer's books and instructions into a procedure manual.
FACT: Manufacturer's instructions and manuals usually provide sufficient written procedures. Normally, the only additional requirement is a written quality assurance program.

MYTH 8: I will have to change all my routines.
FACT: No routine should be changed.

MYTH 9: CLIA will require a lot more paperwork.
FACT: Your existing ways of ordering and recording tests are acceptable if they are written anywhere, including on the patient's medical record. Only those results that are not now being recorded will require additional paper.

MYTH 10: I can't understand the regulations.
FACT: The regulations are interpreted by the CLIA officials in Missouri. You can ask questions until you do understand.

MYTH 11: If I don't charge the patient for testing, I don't have to be certified under CLIA.
FACT: All persons and facilities that perform lab tests on human specimens for health assessment must be certified.

MYTH 12: My lab has to be just like a hospital or a reference laboratory.
FACT: Each laboratory is evaluated according to the services offered and patients served.

MYTH 13: I don't like CLIA.
FACT: Nobody likes CLIA, but don't give up.

CLIA workshops are available. The CLIA laboratory officials who provided the information for this article believe that there is a trememdous amount of misinformation circulating among physicians who operate laboratories, and that decisions about whether or not to continue to perform testing are being made based on erroneous information. They request that you get as much factual information as possible before you decide what to do with your office laboratory. Call the telephone number printed above to schedule a workshop.

Note: **Medical Economics** is prepared by Patrick J. Mills, MBA, CPA. Mr. Mills is the Director of Health Care Finance for MSMA. These reports relate to changes in government regulations, insurance coverage, and other topics that may directly or indirectly impact upon a physician's economic situation.

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- Media and Medicine
- Improving the physicians' image
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Manuscript preparation: It is preferred that articles be three to four pages in length (typewritten and double spaced - sent on diskette and labeled with the type of wordprocessing software used). If you have photographs, charts, or exhibits include them with your manuscript.

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Take Me Out of the Call Game

by Craig S. Holzem, MD

A most curious item in the paper today,
43 million for a grown man to play
a mere childhood game with a ball and a stick,
yet he'll make much, much more than those treating the sick.
On his interest alone my whole pay can't compare
but I'll still get complaints that MY prices aren't fair.
Is it worth treating sniffles and rashes and warts,
when there's more to be made in professional sports.
But what if in life we could change all the rules
and start teaching baseball in medical schools.
We'd be like the Ozzies, the Neons, and Bos,
You'd better believe these are my kind of PROs.
It wouldn't take long to build on this dream
and most any physician could play on our team.
In the job at the plate OB's your best bet.
I've watched them catch babies and not drop one yet.
And the person who's best to be on the mound
is often a surgeon (or so I have found).
It may sound simplistic, but everyone knows,
that you call on a surgeon when it comes time to close.
But if there are problems and he just won't behave
the doctor in ER can give you a save.
Internal Med at the corners we'll play
they seldom make errors ('least that's what they say).
Put the Procto at second and GI at short
they've played lots of bowel games and might like this sport.
For the outfield a man who can play all positions
the obvious choice is, the Family Physicians.
We still need our subs when late innings have passed,
so we'll call up on Ortho to round out this cast
Now no finer team has there ever been made
and you'll always be sure that they earned what they're paid.
We don't grab our crotches, we don't even spit,
and with most of our fans you can bet we're a hit.
The sacrifice play is the one we've perfected,
and this is the reason we're still well respected.
And the most valuable physician (AKA:MVP)
will always do better than .333.
So let's get to practice and have at the ball,
'Cause it sure is much better than being on call.

INDICATIONS FOR PROPHYLACTIC MASTECTOMY

Jane Riolo Nemecek, MD, V. Leroy Young, MD, and Marvin J. Lopez, MD

This article reviews the current state of knowledge regarding factors which put women at highest risk for developing breast cancer and identifies that population we consider as potential candidates for prophylactic mastectomy. Specifically, we focus on the concept of cumulative predisposition and the relative risk assigned to more significant factors that increase a woman's chances of developing breast cancer: family history, proliferative breast histology, and previous cancer in one breast. In addition to outlining the results of reconstruction, the article also examines the controversy surrounding the issue of whether any mastectomy can be truly prophylactic. We conclude with advice to physicians who must counsel women concerned about their breast cancer risk so they can help their patients make fully informed choices.

The rationale for prophylactic mastectomy is the prevention of a potentially lethal disease that affects 175,000 women annually and results in more than 45,000 deaths per year.[1] Breast cancer will develop in 11% of the female population of the United States of America. Until recently, histologic and genetic factors affecting the relative risk for breast cancer were unknown or poorly understood. This resulted in liberal indications and, at times, indiscriminate use of this operation. With increasing understanding of breast cancer epidemiology, pathology, diagnosis, and treatment, the indications for prophylactic mastectomy have become more selective. Today, screening for breast cancer is widely accepted, and smaller lesions are currently diagnosed. It is possible that the "occult" carcinomas found in prophylactic mastectomy specimens in the 1960s may be similar to those found today during screening examinations. There has been a clear demonstration of breast cancer mortality reduction by screening asymptomatic women. The greatest benefit of screening is achieved in women with impalpable cancers discovered mammographically.[2] Also, current mammographic techniques can be relied upon for periodic surveillance of women at high risk of developing breast cancer. However, the most compelling argument limiting the use of prophylactic mastectomy is the evolution of invasive breast cancer treatment itself. If partial mastectomy is, in selected cases, equivalent to mastectomy for carcinoma, can complete removal of a breast for non-cancerous conditions be justified?[3-5] At present, the operation is being challenged by many and performed by a few.

From Division of Plastic and Reconstructive Surgery and Section of Surgical Oncology, Department of Surgery, Washington University School of Medicine, St. Louis, MO 63141. Reprint requests to 1040 North Mason Road, Suite 206, Barnes West County Hospital, St. Louis, MO 63141 (Dr. Nemecek)

The objectives of this paper are to review this controversial subject and specifically attempt to answer the following questions: 1) Who is at higher risk for breast cancer? 2) What is prophylactic mastectomy? 3) What are the results of reconstructive operations? 4) What can be concluded, and when is this operation justified?

A Critique of the Past

The past three decades witnessed what is now perceived as an indiscriminate or unnecessary use of prophylactic mastectomy.[4-6] Several factors were responsible for the large number of operations performed; anecdotal experience, poorly understood risk factors, and uncontrolled retrospective data. Also, improvements in reconstructive breast surgery, including reconstruction with autologous tissues, probably promoted this practice. For instance, many women were offered prophylactic mastectomy because of mastodynia, unreliable physical examinations due to multi-nodular breasts or multiple previous breast biopsies despite confirmation of benign, low-risk histology.[7-12] Others were operated upon for "cancerophobia", a loosely applied term without clear definition.[4,8]

Three characteristics are necessary for a successful surgical prophylactic procedure:[5,13] 1) The procedure should effectively prevent the disease. In this case, the concept of total prevention is challenged by the reported instances of carcinoma developing in residual breast tissue after prophylactic mastectomy.[9,14] This "residue" varies from 20% of the breast tissue in subcutaneous mastectomy to microscopic foci after modified radical mastectomy.[15] Moreover, carcinoma can develop after prophylactic contralateral simple mastectomy and also can arise from the preserved breast tissue of the nipple and areola.[16-19] 2) The population at risk should be easily identifiable. In the past, family history of breast cancer was an indication for prophylactic mastectomy regardless of the number and age of relatives afflicted with breast cancer, their menopausal status, bilaterality, or whether the relative was first or second degree. At present, detailed family history is critically important in assessing individual relative risk for breast cancer. 3) Cost-benefit analysis of a procedure should be documented. This subject has not been comprehensively studied to date. Furthermore, only a randomized, prospective trial could resolve the cost-benefit issue. Such trial would compare two high-risk groups, one treated by prophylactic mastectomy and the other followed with state-of-the-art mammographic screening and physical examination.

Who is at High Risk for Breast Cancer?

Much of the confusion regarding breast cancer risk stems from imprecise statistical and histologic terminology.[7,20,21] Breast cancer risk in a given individual is the sum of many heterogeneous risk factors. The "relative risk" (life-time risk) of breast cancer for American women (without added risk factors) is 11%. The "cumulative risk" is not just a simple multiplication of the relative risk by other risk factors.[20] For instance, the cumulative life-time risk for a 35-year-old woman whose mother and one sister have breast cancer is about 15%. However, the risk differs if the familial breast cancer occurred before or after menopause and if it was unilateral or bilateral. The added risk may range from 0% to 45%.[13] One study estimated the probabilities of developing breast cancer in 699 sisters of breast cancer patients whose mothers, sisters, or second degree relatives also had breast cancer. A relative risk of 25% and 28% was estimated for women whose mother and sister or two sisters, respectively, were affected with bilateral disease. This risk reduced to 18% and 14%, respectively, if they had unilateral disease. A second degree relative with bilateral breast cancer only increased the relative risk by 4%. In this study, age of the relative at diagnosis of breast cancer had no impact on relative risk.[22] Others have not found bilaterality or age at diagnosis to be associated with a genetic predisposition.[23-25] Despite these controversies, careful gathering of genetic information, pedigrees, and family counselling is important in breast cancer.

For many decades, benign mastopathies have been implicated as increasing the risk of breast cancer. At present, the terms "fibrocystic disease" and "fibrocystic changes or condition" are meaningless without detailed description of the component histological elements.[26] Several studies have documented the observed incidence of carcinoma in women with previous benign breast biopsies, identifying certain histological features associated with increased risk.[27,28] It is now clear that women whose breast tissue is characterized by epithelial proliferation and cellular atypia are at increased risk. These changes include proliferative ductal or lobular elements characterized by hyperplasia. Atypical ductal or lobular hyperplasia have been associated with a 5-fold increase in breast cancer. Women having atypical breast hyperplasia and a first degree relative with breast cancer experienced an 11-fold increase in risk compared with those without proliferative atypical changes.[27] In a consensus conference, the College of American Pathologists Panel agreed that the impact of atypical hyperplasia on breast cancer risk is real. However, moderate hyperplasia without atypia, as well as papillomatosis with fibrovascular core, had a modest increase in risk - in the order of 1.5- to 2-fold. These investigators also identified other breast tissue changes having no associated risk. These include: sclerosing adenosis, apocrine and squamous metaplasia, macro and microcystic changes, ductal ectasia, fibroadenomas, and periductal or inflammatory mastitis. It was also agreed that mild hyperplasia of less than four epithelial cells in depth did not increase the risk of breast cancer.[26]

It has long been recognized that lobular carcinoma in situ (LCIS) is often a multicentric and bilateral disease. The risk of developing invasive breast cancer in patients with LCIS has been estimated to be as high as 15%, 27%, and 35% after 10, 15, and 20 years, respectively.[29] Furthermore, when invasive cancer develops, both breasts are affected with the same frequency and most commonly by the ductal type of invasive carcinoma. When mastectomies are performed in patients with LCIS, up to 4% of specimens will be found to harbor invasive malignancy.[30] While LCIS is viewed as a "marker" for breast cancer, ductal carcinoma in situ (DCIS) is more likely to be a "precursor" of the disease and establishes a higher risk of invasive disease for the same, but not the opposite breast. Currently, treatment of ductal carcinoma in situ is at a crossroads. While there is consensus that DCIS has a greater malignant potential, mastectomy as standard treatment has been recently challenged, and multi-institutional trials are currently attempting to determine the role of breast-preserving procedures and radiation therapy; however, it may be argued that mastectomy, in the setting of DCIS, is prophylactic for invasive, not preinvasive, breast cancer. Further discussion of this controversy is beyond the scope of this article.

In summary, the majority of women with benign breast biopsies do not have proliferative changes and are not at increased risk. Of those whose breast tissue show proliferative changes, the severity of atypical hyperplasia, particularly in association with family history of breast cancer, may increase their risk from 5- to 11-fold. Since these histological changes represent a continuum of the spectrum from mild atypia to carcinoma in situ, it is important to note that the risks are not clearly established for the former, but are from 8 to 10 times for the later.

There is agreement that the patient who has had breast cancer is at increased risk for cancer developing in the opposite breast. This risk has been estimated to be 1% per year of survival with a cumulative lifetime risk increasing to 5 times beyond that of the general population.[6] It is to be noted, however, that not all patients with previous breast carcinoma are at equal risk for cancer developing in the remaining breast, and, for that matter, not at equal risk of dying from the first breast cancer. Thus, in assessing the probabilities of contralateral disease and the appropriateness of prophylactic mastectomy, several risk factors must be considered. These include stage of the previous carcinoma and multi-focality, the presence of carcinoma in situ, atypical ductal or lobular hyperplasia in the remaining breast, and a family history of breast cancer. For instance, a premenopausal patient who has had multicentric cancer in one breast, a sister or mother with breast cancer, and a biopsy of the remaining breast showing atypical hyperplasia, is at a lifetime risk of contralateral breast cancer of 50% or more.

What is Prophylactic Mastectomy?

A prophylactic mastectomy can be performed either as a subcutaneous or a total mastectomy. The choice of surgical procedure is controversial. The controversy centers on differences in reconstructive results and the question of the truly prophylactic nature of either operation.

With a subcutaneous mastectomy the nipple-areolar complex and some of the underlying ductal tissue are preserved. In addition, breast tissue remains in the axillary tail and on the skin flaps. Typically, 75% to 95% of the breast tissue is removed. Preservation of the nipple-areolar complex and thicker skin flaps facilitate a more aesthetic reconstruction. Total mastectomy typically removes 95% to 98% of the breast tissue. The nipple-areolar complex is removed and re-applied as a graft. To eliminate as much breast tissue as possible, the skin flaps are thinned to the superficial fascial layer and the axillary tail is excised. While total mastectomy may produce a larger deformity, good reconstructive results can be achieved.

Even with up to 98% of the tissue excised, clinical and laboratory studies have shown that no form of mastectomy completely eliminates all breast parenchyma. The residual breast tissue left after surgery varies from as much as 5% to 25% after subcutaneous mastectomy to microscopic foci after modified radical mastectomy.[15] Breast tissue is routinely found on the pectoralis muscle deep to its fascia and in the dermis of the overlying skin. Even when the pectoralis major muscle is removed in radical procedures, histologic studies have demonstrated the presence of breast tissue across the midline and onto the abdominal wall. Biopsies performed after mastectomies have identified residual breast tissue in over 80% of the cases. In addition, data from the current epidemiologic studies indicate that 9% of all breast carcinomas originate in the nipple-areolar complex, which may give rise to cancer after subcutaneous mastectomy.[17-19] While a total mastectomy that cores the nipple or removes and re-applies the complex as a graft may offer greater protection in a subcutaneous technique, some risk is still present. If the intention is to excise as much breast tissue as possible, a total mastectomy that leaves thin cutaneous flaps, removes the pectoralis fascia, and resects the tail of Spence and a few low-level axillary nodes should afford the best ontological protection.

Most would agree that removing 95% or more of the breast tissue should significantly decrease the risk of developing breast cancer, yet major laboratory studies with Sprague-Dawley rats showed that prophylactic mastectomy did not reduce the risk of breast cancer. After partial, simple, subcutaneous, and total mastectomies were performed, lab rats were injected with a known carcinogen. Those rats which underwent a prophylactic procedure developed cancer at the same rate as those which did not.[14] Proponents of prophylactic mastectomy say that there is no correlation between these animal studies and humans since rats are known to be unusually susceptible and develop breast cancer at higher rates following injection of carcinogen, something which does not occur in humans.

Three significant clinical studies involving subcutaneous mastectomy seem to support the prophylactic nature of these procedures and contradict the laboratory animal data. In one series 0 out of 500 patients who underwent prophylactic mastectomy developed cancer during the mean follow-up period of more than five years.[31] In another study of 1500 patients followed for up to 22 years, only five developed breast cancer.[32] In the third study six out of 1500 women followed for an average of nine years after subcutaneous mastectomy developed breast cancer.[9] Each of these series revealed an instance of breast cancer that was far lower than the rate of the age-matched control group, and this is especially significant since the women in the study were considered at higher risk than the normal population.

Despite their encouraging statistics, these clinical studies have been criticized by prophylactic mastectomy opponents, who point to the lack of comparison with a regimen of prophylactic surveillance, the liberal indications for mastectomy used

Table I INDICATIONS FOR PROPHYLACTIC SIMPLE MASTECTOMY*

	STRONG	RELATIVE
No prior invasive breast cancer (candidate for bilateral mastectomies with immediate reconstruction).	Bilateral, Multi-focal DCIS Unilateral DCIS or LCIS with contralateral SADH. Bilateral SADH and a first degree relative with premenlpausal breast cancer. Bilateral moderate to high risk proliferative breast histology** and two or more first degree relatives with premenopausal or bilateral breast cancer.	Bilateral SADH in premenopausal woman. No family history of breast cancer. Non-proliferative histology, but two or more first degree relatives with breast cancer.
Prior breast cancer (candidate for contralateral mastectomy and reconstruction).	DCIS, LCIS, or SADH or remaining breast. One or more 1st degree relatives with breast cancer. Combinations of above factors.	Large, pendulous remaining breast, causing shoulder or back pain due to asymmetry. Multiple breast biopsies resulting in difficulty performing or interpreting diagnostic breast examinations. The patient refuses more biopsies and is desirous of bilateral reconstruction.

* Prophylasis for invasive breast cancer.
** Moderate or florid hyperplasia, papillomatosis with fibrovascular core, atypical ductal or lobular hyperplasia.
DCIS - Ductal carcinoma in situ.
LCIS - Lobular carcinoma in situ.
SADH - Severe atypical ductal (or lobular) hyperplasia.

in the studies, and the short-term follow-up of the patients. However, looking at the studies more objectively, we conclude that prophylactic mastectomy does seem to lower the incidence of breast cancer, even though complete prophylaxis cannot be guaranteed. Since the disease may still develop even when almost all breast tissue is removed, prophylactic mastectomy patients must be informed of their ongoing risk and carefully followed with both mammographic and physical examination. Ultimately the choice of subcutaneous or total mastectomy is the patient's.

What are the Results of Reconstructive Operations after Prophylactic Mastectomy?

Even though a reconstructed breast can never be exactly like the one it replaces, surgical techniques have greatly improved during the last decade to produce a superior postoperative appearance. Breast reconstruction may be done as either an immediate or delayed procedure; most patients prefer immediate reconstruction so that they have to undergo only one major surgery and can avoid much of the psychological anguish that accompanies the loss of a breast.

In either an immediate or delayed context, reconstruction is possible with autogenous tissue or with tissue expansion followed by permanent implants. The transverse rectus abdominis myocutaneous flap (TRAM) is the most commonly selected autologous tissue reconstruction. The TRAM flap can be de-epithelialized and placed as an autologous implant beneath the chest wall skin. While a de-epithelialized flap offers an important option when a woman elects to use her own tissue, reconstruction with tissue expansion is preferred by most patients because of its simplicity. Even though prophylactic mastectomy preserves sufficient chest wall skin, tissue expansion almost always precedes insertion of a permanent implant since the circulation in the skin flaps can be compromised immediately after surgery. A tissue expander allows the implant pocket and overlying skin to be expanded gradually until the desired breast size is achieved.

Typically a totally submusculofascial pocket that lies deep to the pectoralis major, serratus anterior, and rectus abdominis muscles is chosen for immediate reconstruction.[33] If reconstruction is delayed, the tissue expander is typically placed beneath the pectoralis major muscle superiorly and in a subcutaneous pocket inferiorly. Recently developed textured expanders have a more anatomic shape and decrease the abnormal spherical shape produced by traditional expanders. A more normal-appearing breast with some degree of ptosis can be reconstructed. When the tissues are sufficiently expanded, a permanent implant can be inserted in a simple second-stage procedure performed on an outpatient basis. Using a textured tissue expander/implant and placing it in a submuscular position has greatly reduced the major complication of reconstruction: formation of a capsular contracture. With today's techniques and prostheses, the incidence of painful and disfiguring contractures has been decreased to about 5%.

In addition to developments in tissue expansion procedures, advances in nipple-areolar reconstruction have significantly improved the cosmetic result following prophylactic mastectomy. If the nipple and areola are not preserved, a nipple can be created from a local tissue flap and an areola established with a skin graft or with tattooing. These procedures can also be performed in an outpatient setting with little risk of morbidity. The relative simplicity and low complication rate of these procedures that add the aesthetic finishing touches can transform the reconstructed breast mound into a more natural-appearing breast.

While advances in reconstruction have been significant, the improved cosmetic result should never be a reason for undergoing prophylactic mastectomy. Patients who choose to have surgery must understand that the missing breast cannot be completely replaced. Even though the appearance may be very acceptable, sensation is lost or altered and the projection and position of the breast mound may be different. In addition to problems that can accompany implants, other complications such as ischemia of the skin flaps may follow both synthetic or autologous tissue reconstruction. The latter technique also involves a lengthy surgery and difficult postoperative recovery. Despite these cautions improved reconstructive techniques can make the decision to undergo prophylactic mastectomy somewhat simpler for a woman at very high risk.

Conclusions and Recommendations

From the preceding discussion, it is clear that prophylactic mastectomy remains a highly controversial subject in preventive oncology. We have no doubt that prophylactic mastectomy has a role in the management of the woman at high risk, but the indications have been narrowed to a few circumstances - the result of intense histological, epidemiological, and genetic studies of the last decade. These findings, coupled with a trend toward breast-preserving treatment for invasive breast cancer, has, in fact, placed the onus on the physician recommending a prophylactic amputative operation, to justify the resection of a breast without cancer and yet preserve a breast (albeit irradiated) with prior cancer. Recent interest in chemo-prevention of breast cancer using tamoxifen may result in reversing the hyperplastic tissue changes, rendering women at a lesser risk for breast cancer.

Estimating the individual risk of breast cancer is both inexact and controversial. Any recommendations should be based on a careful consideration of genetic, histologic, and socioeconomic factors. A thorough discussion with patient and spouse on multiple visits allows the thoughtful physician to understand the potential impact of this operation on self-image, marital relationships, and other important factors. While not every woman needs a psychological assessment prior to prophylactic mastectomy, the judicious use of consultants may, on occasion, help select appropriate candidates for mastectomy.

Several studies have shown that the risk of breast cancer is not completely eliminated by prophylactic mastectomy, especially if conservative resections are undertaken in the name of cosmesis.[9,14,17,18] If total breast tissue excision is intended, a total mastectomy with thin cutaneous flaps, excision of the pectoral fascia, and resection of the tail of Spence with a few low-level axillary lymph nodes affords the best operation.[15] In spite of a thorough procedure, occasional foci of breast cancer may remain, mandating careful periodic follow-up. It is important to note that unsolicited advice in favor of prophylactic mastectomy should not be given to patients with minimal risk. The subject of prophylactic mastectomy should be discussed in such a manner that the patient is able to make an informed choice and does not feel coerced to undergo mastectomy. After all, periodic mammographic and clinical surveillance is a reasonable alternative for most women. Surgeons must be aware of the potential repercussions of mastectomy in women with depression, anxiety, or other clear manifestations of personality disorders. Such individuals should undergo comprehensive evaluation, lest the preventive measure be worse than the risk reduction. However, the surgeon must be attentive to the patient's expressed desires for contralateral mastectomy and should not abdicate responsibility when convincing evidence exists of an inordinately high risk.

At present, we recommend prophylactic mastectomy under the conditions listed in Table I.

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IN MEMORIAM

■ **Sheldon R. Braun, MD,** Columbia, Missouri, died January 13, 1993, at age 49. Dr. Braun received his medical degree at the University of Pittsburgh School of Medicine, in 1968. He served as chief of internal medicine in the Air Force while stationed in Mt. Home, Idaho from 1973 to 1975. He was an associate professor at the pulmonary section at the University of Wisconsin, Madison from 1975 to 1984. Dr. Braun came to Columbia in 1984 to serve as director of the Division of Pulmonary, Critical Care and Environmental Medicine at the University of Missouri-Columbia. He began the Renew Program of Rehabilitative Medicine and served as its director from 1985 to 1992. Dr. Braun was a member of the American College of Chest Physicians, serving as regent in 1987 and 1988 and a governor from 1989 to 1992. He was a member of the American Thoracic Society, Association of Pulmonary Critical Care Medicine Program Directors and the American Society for Parental and Eternal Nutrition. Dr. Braun received the 1992 Lifestyle Award from the American Lung Association of Eastern Missouri and the National Institute of Health Pulmonary Academic Award in 1991. He was editor and main contributor of the *Concise Textbook of Pulmonary Medicine*, published in 1989.

■ **Francis D. Dean, MD,** Fayette, Missouri, died November 3, 1992, at age 82. Dr. Dean received his medical degree at Georgetown University Medical School, Washington, DC, in 1933. He joined the staff of Lee Hospital, Fayette, in 1946. He became an associate in the medical clinic after Keller Hospital was built and Lee Hospital closed. Dr. Dean was a family physician in Fayette for 34 years. He was a life member of the Postgraduate Medical Society, a member of the International College of Surgeons, the American Society of Abdominal Surgeons, the Southern Medical Society, the Missouri and American Medical Associations, and past president of the Howard County Medical Society.

■ **Raymond F. Gard, MD,** Wichita, Kansas, died November 2, 1992, at age 91. Dr. Gard received his medical degree at the University of Kansas School of Medicine, Lawrence-Kansas City, in 1927. He practiced surgery in Independence, Missouri from 1932 to 1969. Dr. Gard was a member of the Southwest Surgical Congress and the American College of Surgeons.

■ **Robert A. Huckstep, MD,** Farmington, Missouri, died November 28, 1992 at age 71. Dr. Huckstep received his medical degree at Washington University School of Medicine, St. Louis, in 1948. He had started practice with the Medical Arts Clinic Group in Farmington in 1955. Dr. Huckstep was also a former physician at Southeast Missouri Mental Health Center. He was a member of the Board of Directors of Mineral Area Hospice, St. Francois County Health Board, Mineral Area Medical Society, Missouri State and American Medical Associations, and the American Society of Internal Medicine.

■ **William Levanvo, MD,** Joplin, Missouri, died January 15, 1993, at age 65. Dr. Levanvo received his medical degree at the Faculte Mixte de Medecine de l'Universite d'Aix de Marseille, Bouches du Rhone, France, in 1959. He arrived in Joplin 1981 and practiced medicine there for several years.

■ **John R. McDaniel, MD,** St. Joseph, Missouri, died December 26, 1992, at age 79. Dr. McDaniel received his medical degree at Harvard Medical School, Boston, Massachusetts, in 1939. He was on the surgical staffs and chairman of the Thompson, Brumm and Knepper Clinic, Methodist Medical Center and St. Joseph Hospital. Dr. McDaniel was a member of the Alpha Omega Alpha Honorary Medical Fraternity and the Boylston Medical Society of Harvard Medical School. He served in the Army Medical Corps during World War II and received the Bronze Star. Dr. McDaniel was a contributing author of general surgery to *The Military Medical History of World War II*. He was a diplomate of the American Board of Surgery, a member of the St. Joseph-Buchanan County Social Welfare Board, the Missouri and American Medical Associations, the American College of Surgeons, the International Surgical Society, the Southwestern Surgical Congress, the Pan-Pacific Surgical Association, the Missouri State and Kansas City Surgical Societies, and a former president of the Buchanan County Medical Society.

■ **Marlin C. Spoeneman, MD,** Jacksonville, Florida, died December 16, 1992, at age 77. Dr. Spoeneman received his medical degree at Northwestern University Medical School, Chicago, in 1940. He practiced medicine in St. Louis and St. Louis county from 1946 until his retirement in 1974. Dr. Spoeneman began private practice after serving with the Army Air Force in the South Pacific during World War II. He was on the staff of DePaul Hospital.

■ **Harry J. Stein, MD,** Jennings, Missouri, died January 11, 1993, at age 87. Dr. Stein received his medical degree at St. Louis University, in 1930. He was in private practice in Jennings until retirement in 1986. He served as president of the St. Louis County Medical Society in 1942. In the 1950s, Dr. Stein pioneered the use of hypnosis for patients with problems dieting or smoking and organized the St. Louis Hypnosis Society. He served Jennings as medical examiner for the fire and police departments and was the medical director of Mother of Good Counsel Nursing Home. Dr. Stein was a member of the Southern, Missouri and American Medical Associations, and a fellow of the American Academy of Family Physicians.

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❖ **Martin L. Bauer, MD,** 24th & Gillham Rd., Kansas City, MO 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Bauer received his medical degree at the University of Kansas in 1973. He completed his residency at Children's Mercy Hospital, Kansas City. Dr. Bauer specializes in pediatrics.

❖ **Geoffrey L. Blatt, MD,** Suite T411, 6420 Prospect, Kansas City, MO 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Blatt received his medical degree at the University of Kansas, Witchita, in 1984. He completed his residency at the State University of New York, Buffalo. Dr. Blatt specializes in neurosurgery.

❖ **Norbert W. Brown, MD,** 1001 E. 101st Terr., Kansas City, MO 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Brown received his medical degree at the University of Kansas in 1988. He completed his residency at the University of Virginia, Charlottesville. Dr. Brown specializes in anesthesiology.

❖ **Scott C. Cozad, MD,** 6400 Prospect, Suite 240, Kansas City, MO, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Cozad received his medical degree at the University of Kansas in 1988. He completed his residency at the University of Kansas. Dr. Cozad specializes radiation therapy.

❖ **Preston V. Dilts, MD,** 2301 Holmes, Kansas City, MO 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Dilts received his medical degree at Northwestern University, Chicago, in 1959. He completed his residency at Chicago Wesley Memorial Hospital and The Chicago Maternity Center. Dr. Dilts specializes in obstetrics and gynecology.

❖ **Lesley L. Ewing, MD,** 2401 Gillham Rd., Kansas City, MO 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Ewing received her medical degree at the University of Kansas in 1981. She completed her residency at Le Bonheur Children's Hospital, Memphis, TN. Dr. Ewing specializes in pediatrics.

❖ **Ralph B. Fairchild, MD,** 3635 Vista Ave. at Grand Blvd., P.O. Box 15250, St. Louis, MO 63110-0250, has become a member of the St. Louis Metropolitan Medical Society. Dr. Fairchild received his medical degree at the University of Texas Medical School, Houston, in 1981. He completed his residency at Ochsner Clinic, New Orleans, LA. Dr. Fairchild specializes in general surgery.

❖ **Karen E. Forsman, MD,** 1040 N. Mason Rd., Suite 120, St. Louis, MO 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Forsman received her medical degree at Rush Medical College, Chicago, in 1981. She completed her residency at Barnes Hospital, St. Louis. Dr. Forsman specializes in dermatology.

❖ **Ann A. Gassman, MD,** 4900 Swope Pkwy., Kansas City, MO 64130, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Gassman received her medical degree at the University of Missouri-Kansas City in 1985. She completed her residency at Children's Mercy Hospital, Kansas City. Dr. Gassman specializes in pediatrics.

❖ **Fred B. Ginsberg, MD,** 11133 Dunn Rd., St. Louis, MO 63136, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ginsberg received his medical degree at Autonomous University of Guadalajara, Mexico, in 1977. He completed his residency at Suny Hospital, Stony Brook, NY. Dr. Gingsberg specializes in anesthesiology.

❖ **Barry A. Gubin, MD,** Suite 310, 6400 Prospect, Kansas City, MO 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Gubin received his medical degree at the University of Missouri-Kansas City in 1984. He completed his residency at the University of Michigan, Ann Arbor. Dr. Gubin specializes in radiology.

❖ **Lynn L. Kleopfer, MD,** 2703 Clark Lane, Columbia, MO 65202, has become a member of the Boone County Medical Society. Dr. Kleopfer received his medical degree at the University of Iowa, Iowa City, in 1979. He completed his residency at the University of Missouri-Columbia. Dr. Kleopfer specializes in pathology.

❖ **Edwin T. Kraemer, MD,** 2900 Baltimore, Suite 400, Kansas City, MO 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Kraemer received his medical degree at the University of Nebraska, Omaha, in 1987. He completed his residency at Truman Medical Center. Dr. Kraemer specializes in family practice.

❖ **John D. Hubbard, MD,** 1001 E. 101st Terr., Kansas City, MO 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Hubbard received his medical degree at the University of Missouri-Columbia, in 1987. He completed his residency at the University of Missouri Hospital & Clinics. Dr. Hubbard specializes in anesthesiology.

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❖ **Mark F. Lierz, MD,** Suite 5300, 4321 Washington, Kansas City, MO 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Lierz received his medical degree at the University of Kansas in 1987. He completed his residency at University of Kansas. Dr. Lierz specializes in urology.

❖ **James H. Peterson, MD,** 226 S. Woods Mill Rd, 58W, Chesterfield, MO 63017, has become a member of the Missouri State Medical Association. Dr. Peterson received his medical degree at St. Louis University in 1980. He completed his residency at St. Luke's Hospital. Dr. Peterson specializes in internal medicine.

❖ **Stephen R. Russell, MD,** 3655 Vista Ave., St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Russell received his medical degree at University of California-Los Angeles School of Medicine in 1982. He completed his residency at Bascom Palmer Eye Institute, Miami, FL. Dr. Russel specializes in ophthalmology.

❖ **Mark A. Scheperle, MD,** 2340 S. Hampton Ave., St. Louis, MO 63139, has become a member of the St. Louis Metropolitan Medical Society. Dr. Scheperle received his medical degree at the University of Missouri-Kansas City in 1990. He completed his residency at St. Mary's Health Center, Kansas City. Dr. Scheperle specializes in internal medicine.

❖ **David Schuval, MD,** 11144 Tesson Ferry Rd., St. Louis, MO 63123, has become a member of the St. Louis Metropolitan Medical Society. Dr. Schuval received his medical degree at Suny Upstate Medical School, Syracuse, NY, in 1985. He completed his residency at Booth Memorial Hospital. Dr. Schuval specializes in colon and rectal surgery.

❖ **Daniel L. Silbergeld, MD,** 660 S. Euclid, Box 8057, St. Louis, MO 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Silbergeld, received his medical degree at the University of Cincinnati College of Medicine, in 1984. He completed his residency at the University of Washington, Seattle, WA. Dr. Silbergeld specializes in neurosurgery.

❖ **Angela R. Stewart, MD,** P.O. Box 7041, 1506 E. Broadway, Columbia, MO 65205, has become a member of the Boone County Medical Society. Dr. Stewart received her medical degree at the University of Missouri-Columbia, in 1988. She completed her residency at the University of Missouri. Dr. Stewart specializes in anesthesiology.

❖ **Alexandra J. Strong, MD,** 6724 Troost, Kansas City, MO 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Strong received her medical degree at the University of Missouri-Kansas City in 1986. She completed her residency at Butterworth Hospital, Grand Rapids, MI. Dr. Strong specializes in orthopedics.

❖ **Sanford M. Thal, MD,** 2040 Concourse Rd., St. Louis, MO 63146, has become a member of the St. Louis Metropolitan Medical Society. Dr. Thal received his medical degree at the University of Missouri-Columbia, in 1980. He completed his residency at St. John's Mercy Medical Center. Dr. Thal specializes in pathology.

❖ **Robert W. Thompson, MD,** One Barnes Hospital Plaza, Suite 5103 Queeny Tower, St. Louis, MO 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Thompson received his medical degree at the University of Michigan, Ann Arbor, in 1983. He completed his residency at Brigham and Women's Hospital, Boston, MA. Dr. Thompson specializes in vascular surgery.

❖ **Terence P. Wade, MD,** 3635 Vista Ave. at Grand Blvd., St. Louis, MO 63110-0250, has become a member of the St. Louis Metropolitan Medical Society. Dr. Wade received his medical degree at Loyola University, Chicago, in 1978. He completed his residency at the University of Kansas. Dr. Wade specializes in general surgery.

❖ **Linda D. Wilkinson, MD,** 1001 E. 101st Terr., Kansas City, MO 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Wilkinson received her medical degree at the University of Missouri-Kansas City, in 1985. She completed her residency at Northwestern University, Chicago. Dr. Wilkinson specializes in anesthesiology.

RESIDENTS

Frank H. Ryan, MD - *Plastic Surgery*
Matthew B. Sutton, MD - *Internal Medicine*
Manzoor A. Tariq, MD - *Internal Medicine*
Patrick Y. Tong, MD - *Ophthalmology*

STUDENTS

University of Missouri-Kansas City
Emily Tzu-Huey Chu, William R. Dennis, Hillary P. Hofmann, Vasu Kakarlapudi, April Lee, Casie Lin, Aribbe A. Martin, Thomas Nittler, Lien Pham, Ralph Silverman, Heather S. Thole

Vanderbilt University
Thomas R. Talbot III

University of Missouri-Columbia

Joyce A. Mitchell, PhD, director of MU's medical informatics group and professor of child health, will head a new program to train cross-disciplinary investigators for academic careers in medical informatics through a five-year grant from the National Library of Medicine.

Predoctoral and postdoctoral fellows in the program will participate in ongoing research projects in areas such as artificial intelligence, expert systems, computer vision, computer recognition of dermatologic features, open systems, networking for biotechnology information systems, full-text searching of online medical databases, transmission and storage of medical images over computer networks and via telephone communications, graphical presentation of medical information to improve decision making, and clinician's work stations.

Lester Bryant, MD, ScD, dean of the MU School of Medicine, has been appointed by the U.S. Secretary of Veteran's Affairs to a four-year term on the department's Special Medical Advisory Group. The 21-member group advises the secretary, through the chief medical director, on the care and treatment of disabled veterans and other matters pertinent to the Veterans Health Administration.

Gordon Brown, PhD, professor and director of MU's health services management program, recently was appointed to the Executive Committee of the Accrediting Commission on Education for Health Services Administration. The 11-member commission is the accrediting body for health administration programs.

Robert W. Gaines, MD, professor of orthopedic surgery, has been elected director of the Council on Education for the North American Spine Society.

Charles L. Puckett, MD, professor and chief of plastic and reconstructive surgery, has been elected parliamentarian of the American Society of Plastic and Reconstructive Surgeons.

Gilbert Ross, MD, professor and chief of urology, was a guest lecturer recently at the German Urological Association meeting in Wurzburg, Germany. He spoke on "Indications for Continent Diversion."

Boyd Terry, MD, associate professor of general surgery, recently was elected president of the American Society of Bariatric Surgery.

St. Louis University

St. Louis University School of Medicine, in conjunction with Cardinal Glennon Hospital, has opened the first adult cystic fibrosis services clinic in the St. Louis area. Patients who use the clinic will benefit from a multi-disciplinary approach to treatment with pulmonologists, physical therapists, occupational therapists and social workers, all being part of the treatment plan.

Daphne E. deMello, MD, professor of pathology in the division of pediatric pathology, has received a one-year grant to study the effects of the drug Survanta on babies born prematurely. The drug is given to help ease the complications of immature lungs by compensating for the deficiency of surfactant, a lipoprotein complex, needed to maintain the stability of lung air spaces so that normal gas exchange can occur. Mortality rates dropped by more than 70% at Cardinal Glennon Children's Hospital when doctors began using Survanta. Dr. deMello will explore the cases in which the infant did not survive.

St. Louis University researchers have found that combining chemotherapy, radiation and surgery to control or eliminate esophagus cancer increases the survival rate of patients when compared to conventional methods which include only one or two of the therapies.

Radiation oncologist administered four weeks of chemotherapy and radiation to 60 esophagus cancer patients. Patients then waited four weeks for the results of the treatments before undergoing surgery to remove their esophagus. During the six-year study, 70% of the patients had their esophagus removed, 35% had no signs of cancer after the combined procedures.

According to **Tapan S. Roy, MD,** associate professor and director of the department of radiation oncology, most esophagus cancer patients who underwent conventional treatment died within 12 months. The combination treatments extended the lives of most patients to 24 months. One-third of the patients showed no evidence of the cancer at the time of surgery.

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Paul J. Petruska, M.D., associate professor of internal medicine in the division of bone marrow transplantation, oncology and hematology, and **Keith S. Naunheim, MD,** associate professor of surgery in the division of cardiothoracic surgery, also contributed to the development of this procedure.

D. Douglas Miller, MD, associate professor of internal medicine in the division of cardiology, has received a grant to study a drug used to keep blood vessels open following balloon angioplasty. The grant from LIPHA in Lyon, France will be used to study the drug Naftidrofurly which blocks the effects of serotonin, a naturally occurring substance that can cause vessels to constrict. Preliminary studies indicate that Naftidrofuryl modulates vascular injury and prevents platelet aggregation or a build up of platelets in the vessels which contribute to restenosis.

Sameer I. Shehadi, MD, professor of surgery and director of the division of plastic surgery, has developed a new approach to skin grafting for burn victims. Dr. Shehadi's idea is to use implantation and expansion techniques to grow skin on the individual rather than in the lab. A small piece of skin is mounted on top of an expander and implanted deep under the person's skin. As the skin grows, the expander is enlarged, stretching the skin. When the new skin is ready it is removed from underneath the healthy skin and used as a skin graft. The technique has only been tested in the lab so far. Dr. Shehadi hopes it will be available for burn patients within five years.

Daniel S. Zahm, PhD, associate professor of anatomy and neurobiology, has received a four-year grant from the National Institute of Neurological Disorders and Stroke to study the changes that accompany the loss of dopamine in the basal ganglia, the part of the brain that influences motor activity, mood and cognition. Researchers have identified multiple, more or less separate pathways from the midbrain, where dopamine is made, to the basal ganglia, where is exerts some of its major actions. Dopamine may have different effects depending upon which pathway releases it. It is not known with what cell types the pathways originate. Dr. Zahm's research includes identifying the cell types and their propensity for degeneration, how certain cells in the basal ganglia respond to the loss of dopamine, and how signals from the altered cells are transmitted through the circuitry of the basal ganglia.

Paul J. Garvin, MD, professor of surgery and director of the abdominal organ transplant service, has received a one-year grant from Mid-America Transplant Services for organ transplant research. The grant is for research on the prevention of structural and functional damage from acute renal ischemia, a severe deficiency of blood flow to the kidneys due to a functional or actual obstruction of a blood vessel.

Washington University

A one-year study of ten women age 60 to 70 showed that older women's hearts do not adapt to exercise like their male counterparts. Older and younger men and younger women improve their heart's pumping capacity by physiological enlargement of the heart. After a year of 60-minute workouts four times a week, the women improved their aerobic exercise capacity level by 21 percent, similar to men their age, but their heart function did not improve.

This is the first study to show that older women can improve their exercise capacity without cardiac adaptations. Their improvement of exercise capacity and increased oxygen consumption is the result of small blood vessels surrounding the muscles improving their ability to extract more oxygen from blood. The reason for the difference is not known, but one explanation may be related to a sex hormone deficiency.

Researchers have developed blood tests that give physicians a faster way to identify heart attack patients who are not responding to clot-busting drugs. The tests reliably identify, during the time period when treatment is most effective, patients who will need more invasive therapy to restore the blood flow to the heart.

The clot-dissolving drugs streptokinase or t-PA, restores blood flow promptly in 50 to 75% of patients. An invasive X-ray imaging procedure, angiography, had been the only reliable way to identify the return of blood flow in a blocked artery. The test is not always practical to perform during the early stages of an attack and some hospitals do not have the necessary facilities.

The study lead by **Dana R. Abendschein, PhD,** monitored 176 patients for blood levels of two enzymes, MD creatine kinase (MB CK) and MM creatine kinase (MM CK). The enzymes leak from dying heart cells and wash out into the bloodstream as blood flow is restored to the heart. Once in the circulating blood, MM CK and MB CK undergo subtle chemical changes resulting in isoforms. By monitoring isoform levels for certain characteristic changes investigators could determine whether blood flow had been restored to the heart. The tests yield results within 30 minutes.

Government Intervention in Residency Training - Encouragement or Coercement?

by Maria Evans, MD

The shortage of primary care physicians in many areas of the U.S. has spurred several state and federal legislators to look seriously at the process of training physicians in this country. Historically, we "enjoy" the salaries we earn as residents as a direct result of Medicare payments. Before Medicare, a resident's annual "salary" was lucky to consist of $500, a warm place to sleep, and free meals and laundry. Only when the federal government reimbursed medical schools and teaching hospitals through Medicare-generated funds did residency evolve into a true salaried position.

Unfortunately, many federal lawmakers have been entertaining the proposition that, since primary care residencies are generally three years in duration, the federal government may only be interested in funding training programs for three years of training. These sorts of suggestions are taking place under the guise of "encouraging primary care."

State lawmakers have been busy in this regard, as well. For instance, the California legislature recently passed a bill requiring 50% of the medical students in the University of California system to enter primary care residencies, or the institutions would be penalized by redistribution of funds. Colorado's state house passed a similar bill requiring 35% of the University of Colorado's medical graduates to enter family practice within five years of graduating. Fortunately, both bills were vetoed by their respective governors. At least 14 states have proposed legislation targeted at increasing the number of primary care physicians.

Missouri law allows students to receive loans from the Department of Health of up to $6,000 per academic year. One-fourth of the principal and interest of such a loan will be forgiven for each year that a physician practices in an area of shortage after primary care residency. HB564 calls for raising the limit on such loans to $7,500. It also allows a fund in the state treasury currently used to repay educational loans of practicing physicians who work in underserved areas to be used to make loans and receive payments under the medical student loan program.

Another bill, HB246 would establish a "Health Access Incentive Fund" to be used to provide incentives for physicians, especially primary care physicians, to practice in underserved areas. The fund could be used to repay student loans, help pay for liability insurance, subsidize practice costs, provide start-up grants and locum tenens. Physicians receiving incentives would agree to serve all patients regardless of their ability to pay.

Although the AAMC and the ACGME have both set a goal that 50% of all medical school graduates enter primary care, their recommendations suggest that this be enacted through incentives, not coercement. Both the AMA and the AMA-RPS opposes the use of quotas, the imposition of manpower targets, and other forms of negative sanctions that restrict freedom of specialty choice.

Your lawmakers need to hear your views on this subject right away, while these issues are still in the "opinion-forming" stage. Below are some examples of incentives some states are using to encourage primary care practitioners:

California, Colorado, Kansas, Maine, Pennsylvania - Educational loan repayments to primary care practitioners who practice for a specified time in designated health personnel shortage areas.

Kansas - Scholarships to students who enter primary care.

North Carolina, Oklahoma - Cash stipends to primary care practitioners who practice in shortage areas.

South Dakota - Financial reimbursement to family practice residency programs.

Unlike mandated primary care directives, encouragement strategies enhance the credibility and attractiveness of primary care fields (traditionally because of lower pay) while preserving the integrity of personal freedom of career choice. Once again, your letters can make a difference!

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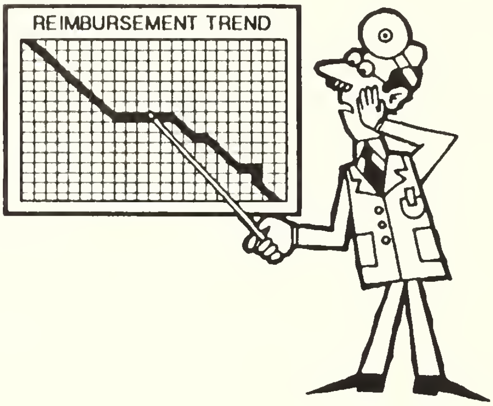

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March

Every week to Oct. 1, 1993. AIDS, Malpractice, OSHA and Medicare. 28 resort-based classrooms. Contact American Educational Institute, Inc., 401 S. Woodward, Suite 333, Birmingham, MI 48009, 800/354-3507, fax 313/433-0615.

1 to May 24 (Monday evenings) - *St. Louis*: Internal Medicine Review. 36 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

2nd & 4th Tuesdays - March/April - *Kansas City*: 2nd Annual Perinatal-Neonatal Core Curriculum Workshops. 5 credit hours. Contact Carol Osborne, St. Luke's Hospital, 816/932-3737.

3 - *St. Louis*: Current Ethical Issues in Medicine. 4 credit hours. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

5 - *St. Louis*: Supportive Care of the Cancer Patient - Surviving in the 90s. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

5 - *Kansas City*: Health Care for the Older Woman. 5.5 credit hours. Contact The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132, 816/276-4306, Toll free, in MO, 800/892-5771, ext. 4306, bordering states, 800/821-5140, ext. 4306.

6 to 13 - *Vail, CO*: Update in Clinical Medicine. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

7 to 9 - *San Diego*, CA: 13th Annual Conference on Peritoneal Dialysis. Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

10 to 12 - *St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Provider Course. 20 credit hours. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

13 - *St. Louis*: New Developments in Antithrombotic Therapy. 7 credit hours. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

8 - *St. Louis*: Cost Efficiency of Screening for Colon Cancer. City-Wide Radiology Conference by David Gelfand, M.D. For more information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

15 to 17 - *St. Louis*: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part I: Cervical Spine Trauma. 20 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

18 & 19 - *St. Louis*: Gastrointestinal Surgery: Refresher Course and Update. 14 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

18 to 20 - *St. Louis*: Practical Anatomy & Surgical Workshop, Spinal Fracture Fixation - Part II: Thoracolumbar Spine Trauma. 20 credit hours. Contact the St. Louis University School of Medicine, CME Office, 314/577-8167 or 800/553-2712.

25 to 27 - *Norfolk, VA*: Laboratory Workshop in Breast Reconstruction. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

26 - *St. Louis*: Neonatal Pharmacology. 6.25 credit hours. Contact Patricia Nash, the St. Louis University, 314/577-8365.

26 to 27 - *St. Louis*: Advanced Trauma Life Support Course. 16 credit hours. Contact Mary Keegan, RN, St. Louis University, 314/577-8365.

26 to 28 - *Tan-Tar-A, Osage Beach*: Fifth Annual Conference - Mental Health and Aging: Special Needs Population. 14 credit hours. Contact Jane Colt, St. Louis University, 577-8726.

30 - *Hong Kong*: Glucocorticoid-Incuced Bone Loss Mini-Symposium: Osteoporosis and Consensus Development Conference-Hong Kong. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

31 to April 2 - *St. Louis*: Noninvasive Diagnosis of Vascular Disease Symposium. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

April

8 & 9 - *Norfolk, VA*: Hands-On Workshop on Advanced Diagnostic Methods in Andrology. Contact Eastern Virginia Medical School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

12 - *St. Louis*: City-Wide Radiology Conference. For more information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

13 & 14 - *St. Louis*: Transesophageal Echocardiography Course. 13 credit hours. Contact Dianne Reid, St. Louis U., 314/577-8897.

19 to 23 - *St. Louis*: Medicolegal Death Investigator Training Course. 33 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

20 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

22 & 23 - *St. Louis*: 25th Annual Matt Weis (OB/GYN) Symposium. 12 credit hours. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

23 - *Norfolk, VA*: Thrombolysis: It's Role in Peripheral, Arterial and Venous Disorders. Contact Eastern Virginia Medical School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

22 to 24 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Advanced Microsurgery of the Lumbar and Cervical Spine. 24 credit hours. Contact St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

24 - *St. Louis*: Hemodynamic Monitoring in Anesthesia and Intensive Care. 6.5 credit hours. Contact CME, Washington University, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in MO, 800/325-9862 Interstate.

Continued on page 152

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Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

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References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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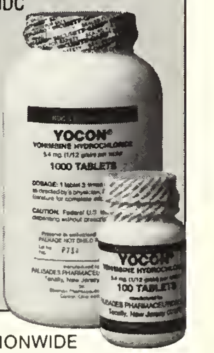

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Continued from page 151

29 to May 2 - *Philadelphia, PA*: **Clinical Electrocardiography: Basic Concepts & Interpretation, 13th Edition.** Contact Eastern Virginia Medical School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

30 - *St. Louis*: **Integrating Cancer Prevention and Early Detection into Primary Care.** 6 credit hours. Contact St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8277, 314/569-6290.

30 to May 1 - *St. Louis*: **Hearing Aid Conference.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

30 to May 2 - *Arlington, VA*: **Pathology of HIV.** Contact Daniel E. Reichard, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone 202/994-4285, fax 202-994-1791.

May

5 - *St. Louis*: **Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Recertification Course.** 7 credit hours. Contact St. Louis University, CME Office 314/577-8167 or 800/553-2712.

5 - *St. Louis*: **Update in Thoracic Surgery.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

6 to 8 - *St. Louis*: **WUMCAA Reunion.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

6 to 9 - *Pentagon City, VA*: **Practical Dermatology for the Primary Care Physician, 19th Edition.** Contact Eastern Virginia Medical School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

10 - *St. Louis*: **MR Imaging of the Pelvis.** City-Wide Radiology Conference by Jeffrey Weinreb, M.D. For more information contact R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

11 to 13 - *St. Louis*: **Doppler Echocardiography Course.** 20 credit hours. Contact Dianne Reid, St. Louis U., 314/577-8897.

13 - *St. Louis*: **Current Perspectives in Menopausal Problems.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in MO, 800/325-9862 Interstate.

13 to 16 - *Washington, DC*: **Central Atlantic Seminar in Anesthesiology.** Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, 202/994-4285, fax 202-994-1791.

Kansas City: **Ralph R. Coffey Surgical Symposium.** 14 credit hours. Contact Carol Osborne, CME Office, Saint Luke's Hospital of Kansas City, 816/932-3737.

20 to 22 - *St. Louis*: **Practical Anatomy and Surgical Technique Workshop: Temporal Bone Surgical Dissection - Exploring New Surgical Instrumentation with Midas Rex Hands-On Workshop.** 16 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

26 - *St. Louis*: **Neonatal Pharmacology.** 6.25 credit hours. Contact Patricia Nash, St. Louis University, 314/577-5631.

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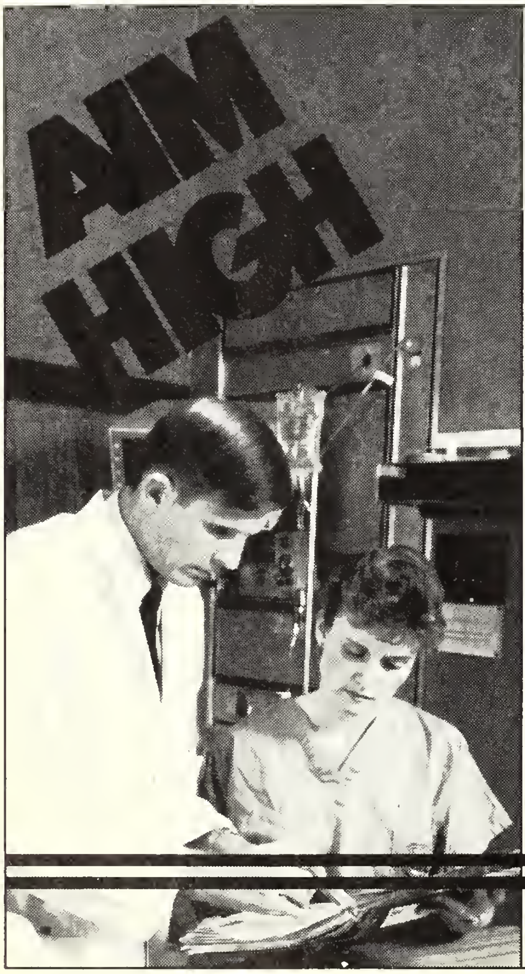

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PRAVACHOL® (Pravastatin Sodium Tablets)

CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and lactation. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials ($<0.1\%$). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia. Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SO 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SO 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine: The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SO 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SO 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin, antacids* (1 hour prior to PRAVACHOL), *cimetidine, nicotinic acid,* or *probucol,* no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p<0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p<0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p<0.05$). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter^2). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions: An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting.

Reproductive: gynecomastia, loss of libido, erectile dysfunction.

Eye: progression of cataracts (lens opacities), ophthalmoplegia.

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

(J4-422A)

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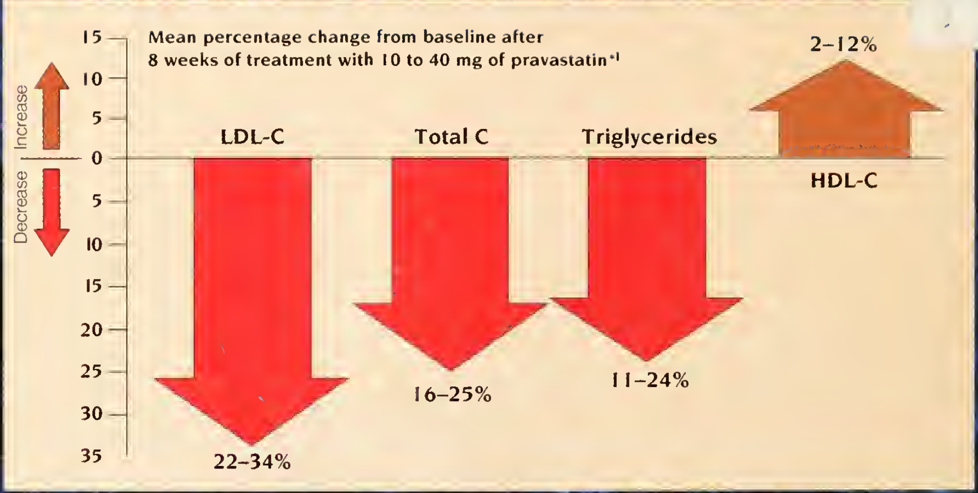

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Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

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Missouri Medicine

Journal of the Missouri State Medical Association April 1993

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- ☐ Advances in the treatment of calcaneus fracture
- ☐ Transvaginal electron beam cone for treating cervical cancer
- ☐ Installment four: Chronic Disease Reports, mammography utilization

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Donald G. Sessions, MD
Wilfred E. Wooldridge, MD

MISSOURI STATE MEDICAL ASSOCIATION
Box 1028
113 Madison Street
Jefferson City, Missouri 65102
Phone: 314/636-5151
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This is one of the many Missouri nature scenes captured by Charles Norland, MD during travel around the state. Dr. Norland has a private practice in St. Louis and is also an associate professor of clinical medicine at Washington University and chief of gastroenterology at Missouri Baptist Medical Center. Several of his photographs are displayed at Missouri Baptist Hospital and the St. Louis Medical Clinic.

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MY LEFT HAND

guest editorial by Wilfred E. Wooldridge, MD

For a long time I thought that I had adjusted to life in a right-handed world. But, something happened recently that reminded me of the forces that confront those of us who are left-handed.

What did it was this; a new spinning reel came on the market. It was exactly what I needed for a certain type of fishing. I couldn't get an order into the mail fast enough. Then, I waited, and waited, and waited. Finally, instead of the reel came a letter of condolence. That reel wasn't made for left-handers. I wanted that reel with all my heart and soul, but it was denied me for the flimsiest of reasons. Then, it hit me. News had once again been served on me that I was among the 11% of us who are left-handed, and nobody seems to care that we are ignored by the righteous right.

However, my troubles began much earlier. In the first grade at the old Fairbanks School, my teacher, Miss Daisy Van Winkle, removed the crayon from my left hand and placed it in my right hand. "That, Wilfred, is how you write," she said. A year later, I made it to the second grade, by the grace of God, and I graduated to a pencil, but the melody was the same. My teacher, Miss Ida Grace Stanley, frowned in disapproval because Miss Daisy Van Winkle hadn't gotten the job done. Transferring the pencil, she said, "Wilfred, we use our right hands." But I was so dominantly left-handed I had my revenge. I made them understand that, as far as I was concerned, it was the left hand, or none at all, and they could not have that. Thus, I broke my first two teachers and, for one reason or another, have made most of the rest miserable, but that is still yet another matter.

This left-handed business has a melancholy history. Even our language is down on left-handers. The latin word "sinister," for left, means evil, or menacing. The French word for left is "gauche," meaning clumsy, or awkward. A "left-handed compliment" is an insult. We say that someone who is clever and skillful is "adroit," from the French word meaning right. Someone who can use both hands with equal ease is said to be "ambidextrous," implying that person has two right hands. Even nature adds her two cents worth because every vining plant except honeysuckle spirals to the right. Also, practically all sea shells spiral to the right and when a left-handed one is found it is highly prized by collectors.

However, we left-handers do get in a lick or two. Left-handed boxers and tennis players are the dread of their opponents but, even then, are termed "dexterous", to add further insult. Another break for left-handers is the ease of using a highway toll booth, but the reason for that is our forefathers determined we should drive on the right side, and that was hard-headedness, rather than handedness, because the English drove on the left and thus we must do it the other way.

This business of being left-handed may be a matter of degree. People like me are so dominantly left-handed we rarely miss that right hand unless we need both. However, many are not so dominantly left-handed. They may, for instance, throw a ball with the right hand, but use the left for eating or zipping up clothes. Again, some who are not so miserably left-handed use the right hand almost entirely because they are trained that way. Infants, for instance, will invariably be taught to eat by having spoons placed in the right hand. Just to confuse the issue, there are some who are inconsistent. President Gerald Ford, when sitting, writes left-handed, but, when standing, writes right-handed. I have no explanation for that, except that what ever politicians do never makes much sense anyhow.

Furthermore, some cultures simply do not tolerate left-handedness. In polo, it is against the rules to play left-handed, and I would advise any of you polo aspirants to keep that in mind. The Chinese insist that everyone be right-handed. Arabs regard the left hand as unclean. In their culture it is the left hand that is reserved for toilet purposes, never the right. In the Mid-East, where water is at a premium for washing, and where communal eating is done from a central bowl with the hands, there is a practical reason to enforce right-handedness. In those same Arab lands a

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most serious penalty, even regarded worst than death, is to have the right hand amputated as punishment for a crime. The unfortunate person who is forced to eat with his left hand is shunned by society.

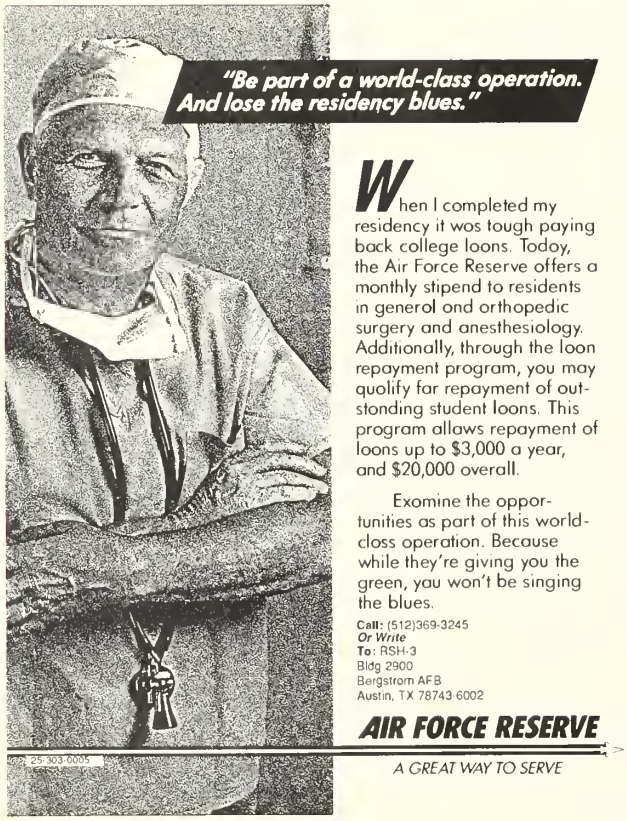
Since handedness may be influenced by training we come to the question of just how many of our population are genuinely left-handed. By using as many approaches as possible to determine this we arrive at that figure of about 11% that I spoke of earlier. That figure seems to have been constant through the ages. Ancient wall and cave paintings were frequently hand prints and about 11% of them are of the left hand. Also, in archaeologic digs about 10% of the stone hand tools are for the left hand. Strangely, most apes are left-handed (I prefer to dodge that one) but, as we descend the ladder of the animal kingdom below the apes, other animals show no hand preference.

The question of hereditary handedness has never been decisively answered, although large numbers of families have been studied. We do know that if both parents are left-handed, so will be 50% of their offspring. However, if both parents are right-handed only 2% of their children will be south paws. Current thought is that handedness does show some hereditary tendency but just how much is still an issue. One very strange fact is that babies who suffer minor brain damage at birth are twice as likely to be left-handed as the general population. I don't find much comfort in that statistic because, in my case, there are many who would say, "I told you so." It is also true that people have one or the other of their eyes as dominant. Hold a finger before you and focus on some distant object. Then look at the finger with both eyes. Then close one eye, then the other. You will find that with one eye the object does not move in relation to the finger, while with the other eye, it does. The eye with which the object seems to view the same as with both is called the dominant eye. Usually, the dominant eye is on the same side as the dominant hand. But in about 11% of people that will not be true. I am dominantly left-handed and I am also dominantly left-eyed so, for once, I obey the rules.

Among the few comforts I find in being left-handed is that I am in good company; Alexander the Great, Charlemagne, Michelangelo, Leonardo Da Vinci, Benjamin Franklin, Mark Twain, Charlie Chaplin, Judy Garland, Babe Ruth, Jimmy Connors, Betty Grable and all three of the recent candidates for president: George Bush, Ross Perot and William Jefferson Clinton. Then, on my personal not to be proud of list are Oprah Winfrey, David Letterman, Tiny Tim and Lawyer F. Lee Bailey, so you can't win 'em all.

But, as a final blow, there is a town in West Virginia named Left Hand. It consists of a vacant church, a dilapidated store, an ex-post office building and a hole in the ground where a filling station had been. So, with that sad note, I conclude.

Wilfred E. Wooldridge, MD, is emeritus clinical professor of medicine in the department of dermatology at the University of Missouri-Columbia. Dr. Wooldridge served as editor of *Missouri Medicine* from 1978 to 1982. He is now a contributing editor to the journal. This article had a former life as a speech given by Dr. Wooldridge and was edited for use in *Missouri Medicine*.



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PROGRESS NOTE

by Carol Williams, MD, MSMA President

Last April at the beginning of my term as President of MSMA I called on the Association to be involved in seeking solutions to the problems Missourians experience in gaining access to health care. The types of barriers to health care vary from area to area within the state. In West Plains, for instance, where there is a preponderance of Medicare-aged patients, physicians struggle to keep their services available to the patients in the face of inequitable payments by Medicare under the Geographic Adjustment Factor. In Cape Girardeau poverty and unemployment contribute to a high utilization of after-hours emergency room facilities by pediatric patients. In Hannibal and northeast Missouri efforts to staff family planning and prenatal clinics are hampered by strict interpretations of the practice act under which physicians are licensed by the Board of Healing Arts. Basic pediatric care for Medicaid patients is not available in Springfield because of low Medicaid reimbursement. Patients in pre-paid and managed care plans find that their long-time physician is not a provider in the company's health care plan so the patient must switch physicians, often repeatedly, to find one who is a provider under the company plan. Patients with pre-existing conditions cannot get health insurance at all.

MSMA has supported several efforts to remedy some of these complex problems. Since the first of the year Missouri Medicaid has vastly improved reimbursement for pediatric services. To insure that workers' compensation patients continue to have access to top-quality practitioners MSMA is working with legislators to incorporate the AMA's updated guidelines on determining the degree of impairment into the Worker's Compensation bill which has been introduced; MSMA is also working to repeal provisions in the law which prohibit physicians from charging for services to workers' compensation patients until after a case has been fully adjudicated and settled. Working its way through the Missouri legislature is a bill which if enacted, will allow collaborative practice between physicians and advanced practice nurses; collaborative practice will remove the constraints which have hampered the provision of immunization programs, family planning, and prenatal services among rural and urban poverty populations.

While not receiving direct MSMA support, the several efforts around the state to deliver medical services to the poor should be noted. In St. Louis the two children's hospitals have joined with community, municipal, and county health centers to establish an after-hours clinic for pediatric patients with non-emergent conditions who normally crowd the emergency rooms; a similar project is underway in Cape Girardeau. In Columbia and North Kansas City free clinics have been established through the efforts of volunteers and the University of Missouri School of Medicine.

While much is being done to address the difficulties of health care access, as patient advocates the physicians of Missouri must continue their commitment to bringing down the barriers to health care. Inequities of payment between urban and rural physicians under the Medicare Geographic Adjustment factor still need to be addressed. Health insurance reform which provides for portability from job to job and elimination of exclusions for pre-existing conditions needs enactment.

MSMA will continue to seek the best possible medical care for all Missourians. The Association will continue to stand as a symbol of unity among the diverse voices of its members. In the diversity physicians will continue to find their common calling. It has truly been an honor and privilege to serve as President of MSMA in 1992-1993.

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Dear Dr. Woerth,

In our practice, we frequently excise benign and malignant lesions. Some of the lesions are deep and require layer closure. How should we bill for the excision of lesions and their closures?

Dr. T. Y.

Dear Dr. T. Y.,

Most insurance carriers, including Medicare, only pay for the removal of lesions when it is medically necessary. In other words, they will not pay for the removal of lesions for cosmetic purposes. If the lesion is removed for cosmetic purposes or the insurance carrier does not consider the lesion removal medically necessary, it is then the financial responsibility of the patient to pay for the procedure. In order to collect from a Medicare patient for services/procedures they deem "medically unnecessary," the Medicare Limitation of Liability form must be completed, then signed and dated by the patient before the service/procedure is rendered.

According to CPT 1993, simple closure is included when benign or malignant lesions are excised. Thus, when lesion removal requires only simple closure, you should bill using only the code for lesion removal. Simple closure/repair is defined by CPT as repair of superficial wounds "involving primarily epidermis or dermis, or subcutaneous tissues without significant involvement of deeper structures, and requires simple one layer closure/suturing."

When a lesion is excised and the resulting wound requires intermediate layered closure, then it is correct to bill for the excision using the appropriate excision code and the appropriate code for intermediate layer closure (codes 12031-12057). Intermediate repair involves "layered closure of one or more of the subcutaneous tissue and superficial (non-muscle) fascia, in addition to the skin (epidermal and dermal) closure."

Likewise, if the excision of a lesion has resulted in a wound that requires complex repair, you may bill using both the excision and complex repair codes. Complex repair, in addition to layered closure, includes scar revision, debridement, extensive undermining stents or retention sutures according to CPT When a complex repair requires grafts or flaps, the repair of the donor site is billed separately in addition to the graft/flap procedure. Also, when debridement and/or decontamination requires prolonged cleaning or the removal of considerable amounts devitalized or contaminated tissue, this procedure may be billed separately using codes 11040-11044.

Dear Dr. Woerth,

Because of the nature of our specialty, we often spend a great deal of time counseling with the patient's family. Is this time billable to Medicare and, if so, how do we bill for it?

Dr. A. L.

Dear Dr. A. L.,

Medicare will pay for counseling to a patient or to a patient's family member when it is part of a patient visit. The definition of counseling and/or coordination of care has been revised for the 1993 CPT evaluation and management codes. Counseling and/or coordination of care now includes physician/family encounters in the medical office or other outpatient setting or floor/unit time in the hospital or nursing facility.

To bill Medicare for counseling to a patient's family, report the appropriate level of evaluation and management code rendered in taking the patient's medical history, examining the patient, making medical decisions, and counseling with the patient and/or family member. When counseling with the patient and/or family dominates more than 50% of the face-to-face encounter with the physician, the appropriate level of evaluation and management code selected is based on the amount of time spent. In these instances, the time spent counseling and/or coordinating care must be documented in the patient's medical record.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, PhD
Practice Management
c/o *Missouri Medicine*
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
202/363-1780

Although your name will not be used in *Missouri Medicine*, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

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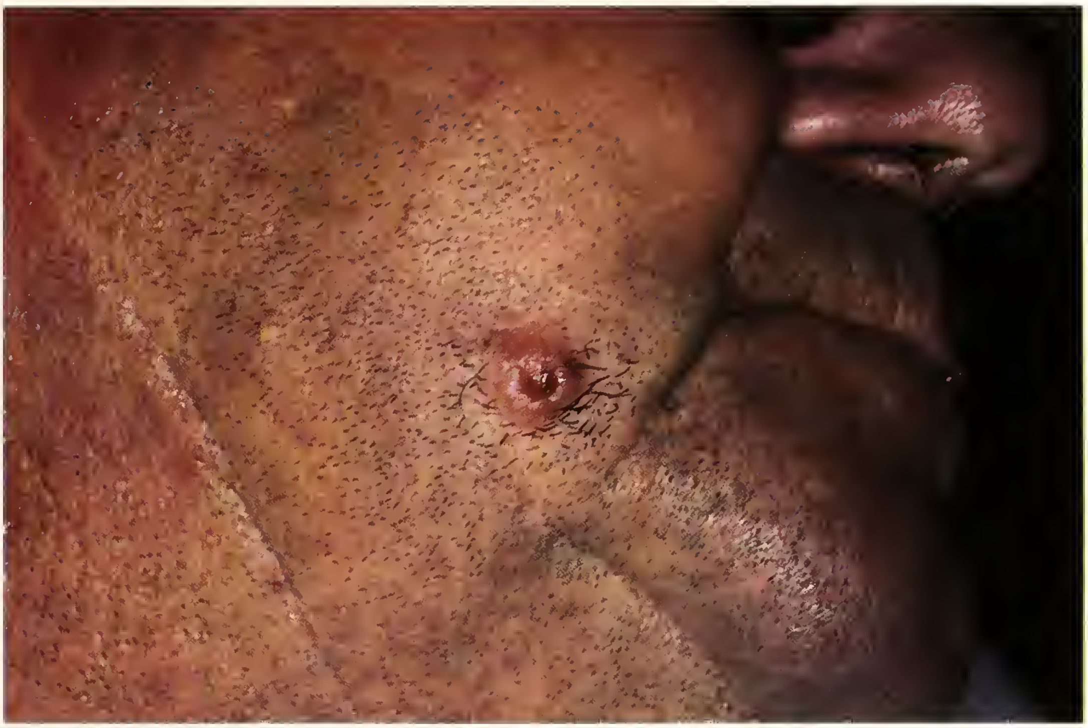
Dermatology Quiz #3



A 65-year-old man complains of a “bleeding sore” which has slowly enlarged over the past three months. This lesion has persisted despite his attempts at cure with a topical salve. In addition, he has significant sun damage following a lifetime of farming.

What is your diagnosis?
- a) Sporotrichosis
- b) Tinea barbae
- c) Malignant melanoma
- d) Basal cell carcinoma
- e) Factitial dermatitis

(*See answer on next page.)*

Submitted by Byron L. Limmer, MD, University of Missouri-Columbia,
Division of Dermatology, M173, One Hospital Drive, Columbia, MO 65212

(The Dermatology Quiz question is located on previous page.)

Answer: d) Basal cell carcinoma

Basal cell carcinoma (BCC) is the most common cutaneous malignancy affecting light-skinned individuals. Rarely a cause of metastatic disease, this tumor often demonstrates great potential for mutilation and disfigurement. As the incidence rate continues to rise, minimizing aggravating factors and properly addressing these tumors when they arise will lead to a reduction in morbidity.

The clinical morphology of BCC is a single or multiple, pearl-colored, translucent nodule with central depression and telangiectasia on sun exposed skin, i.e. face, neck, and upper trunk. Often, the tumor slowly enlarges over months to years and may ulcerate, bleed, and crust. Metastatic disease occurs uncommonly (less than 0.1%), usually a complication of repeated insufficient treatment of the primary tumor.

Prevention of aggravating factors is key to curbing the rising incidence. The primary etiologic factors include ultraviolet radiation, chemical carcinogens, and genetic predisposition. Chronic sun exposure shows the strongest correlation with occurrence of BCC. Previous radiation treatment commonly used for acne, dermatophytosis and eczema, have also led to the development of these tumors. Arsenic exposure via insecticides, medicinals (Fowler's solution), and contaminated well-water, shows a weaker correlation to the development of BCC's. Finally, an inherited predisposition to the development of these tumors is seen in basal cell nevus syndrome, xeroderma pigmentosa, and albinism.

Multiple excisional and non-excisional modalities provide excellent cure rates of BCC. Today's gold standard of therapy is cutaneous micrographic surgery. Cutaneous micrographic surgery analyzes 100% of the surgical margins with five-year cure rates in excess of 99%. Simple, excisional surgery with standard margin control obtains cure rates in excess of 97%. Advances in non-excisional modalities, including cryosurgery, electrosurgery and radiation therapy, have resulted in cure rates in excess of 95%. These non-excisional therapies utilize the known growth characteristics of these tumors to treat a field of tissue containing the tumor and a surrounding area of normal tissue.

Early recognition and prompt therapeutic intervention of basal cell carcinoma reduces the morbidity and disfigurement associated with these tumors. Additionally, patient education concerning avoidance of aggravating factors, especially sunlight, and early self-recognition of these cancers also will reduce their mutilating course. Finally, extended follow-up is recommended as approximately 20% of these patients will develop a second BCC within three years of the diagnosis of their initial tumor.

General references:

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The Dermatology Quiz is coordinated by
Dr. Kent D. Walker
Department of Dermatology
University of Missouri Hospital and Clinics
One Hospital Drive, M173
Columbia, Missouri 65212

GO FOR(E) IT.....MSMA!

by Marge Perkins, MSMAA President

This year has proven to be very invigorating, challenging, rewarding and, yes, even at times frustrating and disappointing, just like the golf game I talked about in my acceptance speech last April. But as I look back over the calendar, I can't tell you how many friendships were made from the visits to fourteen county auxiliaries and four other state annual conventions; how we improved the quality of health and life for all by our many health projects; how we worked and are continuing to work for the candidates of our choice and how we raised over $25,000 and are still raising money for AMA-ERF...education, research, loans and scholarships.

The 'long drives' for membership has been a difficult task. The GO FOR(E) IT...MSMAA these was taken to four counties without Auxiliaries. Benefits of membership were explained with the hope that an Auxiliary will be formed in the near future, thus increasing our membership. Other counties had their own method of recruiting new members and retaining members from the years past. Cole and Greene counties changed their name to Alliance with the hope to attract more male and career spouses. By the way, the AMA Auxiliary will become the AMA Alliance this June. The MSMAA may follow by becoming an Alliance next April. Quad County sent 'membership baskets' to prospective and forgotten members. There were membership brochures, telephone calls, special events and programs to attract and keep members. We need to remember that we are all Membership Chairmen...and that includes you, the physician. Is your spouse a member of the MSMAA?

Our 'iron shots' continue to be the strong part of our game...that is, our Health Projects. This year we joined the AMA Auxiliary in their Campaign Against Family Violence. We asked you to join with us to recognize and report abuse and to find agencies in the community to help those abused. The St. Louis Metropolitan Medical Society Auxiliary raised money to help support the Life Education Mobile Van Unit. This van is equipped to teach children about their bodies and the effect substance abuse can have on their bodies. The van can be moved from school to school. Boone County won the MSMAA Doctors' Day Award and $50 from the Southern Medical Association Auxiliary with their health project, "Caring For Your Child." This three part seminar is designed to aid parents in the care of their children. Buchanan County helped to refurbish rooms at the women's shelter at the YWCA. Clay-Platte County has gotten medication cards made for patients so that they can record the medicines they take. Lafayette-Ray County held a "Body Works Fair." Johnson, Tri-County, South Central, Saline, Mid-Missouri, Dunklin and Grand River distributed the Shaken Baby Syndrome poster and pamphlets to their local hospitals. They also placed them in the offices of OB's and Family practice physicians.

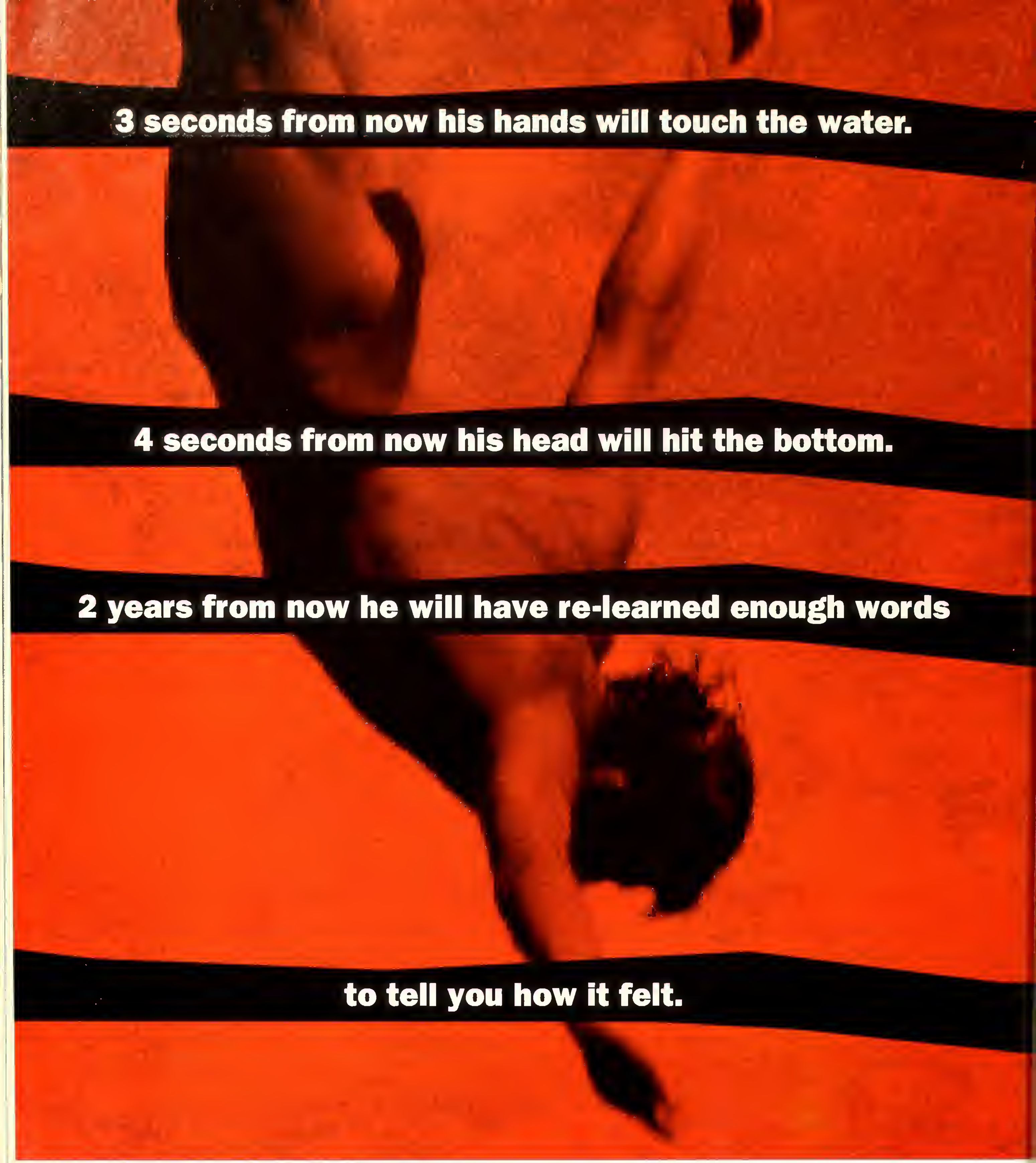
Legislatively we 'chipped close' to those legislators who supported our views on health care issues. Before the election we held coffees, buffets and worked for the candidates of our choice. We registered people to vote, especially health care workers...Yes, You, Doctor. Jasper County had their legislators participate in a forum so that their views could be heard. Our Day at the Legislature was another success. We had coffee, talked to our legislators, watched them at work in the House and Senate and even toured the Governor's Mansion.

We have 'sunk those putts' for AMA-ERF. Many counties had Holiday Sharing Cards to raise money for medical student loans and scholarships and for medical research at the school of their choice. Cape Girardeau County did a Valentine Sharing Card. Metro Med of Greater Kansas City had a Taste Treat Luncheon and cookbook sale. We had our basket auction and GO FOR(E) IT INVITATIONAL Buffet and Dance at the 68th Annual Meeting of the Missouri State Medical Association Auxiliary.

We were asked to join with the Illinois State Medical Society Auxiliary to sponsor Jane Boucher, who gave an all day seminar, "The High Cost of Low Esteem," in October in St. Louis...AND we also sponsored, with the Auxiliaries of Kansas, Iowa and Nebraska, a workshop, "Volunteers Are The Heart of Our Organization" with Marlene Wilson as the speaker in February in Kansas City. Both were well attended, interesting and informative.

So you can see how invigorating, challenging, and rewarding this year has been. It has been a 'golf game' I will long remember. I want to thank each of you for your support throughout this year.

GO FOR(E) IT MSMA.........AND WE DID!!!!!!!!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UTILIZATION OF MAMMOGRAPHY BY MISSOURI WOMEN

Karen M. Northup, MSN, MPH, Ross C. Brownson, PhD, Robert A. Hagan, MS, Joan C. Wilkerson, BA, G. Stephen Nelson, BA

It is estimated that one of every nine American women will develop breast cancer by age 85.[1] Breast cancer accounted for 995 deaths in Missouri in 1991[2] and is second only to lung cancer as the leading cause of cancer deaths among women.

Unlike lung cancer, there is no established primary prevention for breast cancer. Therefore, secondary prevention, or screening to detect the disease as early as possible, is of utmost importance. There is strong epidemiologic evidence that early detection of breast cancer results in significant reductions in mortality.[3-5] Periodic mammography and clinical breast examination are the mainstay of early detection efforts[6] and are an important part of regular preventive health care.[7] Goals for the Year 2000 have been established in Missouri[8] and at the national level[9,10] to increase the percentage of women who undergo mammography.

The five year survival rate for localized breast cancer has risen from 78% in the 1940s to 93% today. If breast cancer is in situ at the time of diagnosis, the survival rate approaches 100%.[1] Despite the clear survival advantages associated with early diagnosis and treatment, many women do not adhere to established guidelines for breast cancer screening.

In this article, we report on mammography usage by Missouri women. The Behavioral Risk Factor Surveillance System (BRFSS) was used to examine reported behaviors by age group and income level.

METHODS

The Missouri Department of Health has been collecting data on behavioral risk factors such as hypertension, cigarette smoking, and obesity since 1985.[11] This surveillance system, developed by the Centers for Disease Control and Prevention is used to formulate intervention strategies, justify resources to support these strategies, and propose new policies or legislation.[12] Risk factor data also provide a mechanism for monitoring health behaviors of Missourians.

A random digit dialing technique[13] is utilized by the BRFSS to select adult Missourians, 18 years of age and older for telephone interviews. The interviews are conducted monthly. Questions regarding utilization of mammography have been included since 1987. A recent validation study found that self-reports of mammography utilization are highly accurate.[14]

We analyzed BRFSS data from 3,606 interviews, collected from January 1989 through December 1992. Data were analyzed using SAS[15,16] and SUDAAN[17] for women in two age groups--40 to 49 years and 50 years and older. These age groups were chosen because specific recommendations for screening are given for this age group. The American Cancer Society (ACS) recommends that women 40 to 49 receive mammograms every one to two years, and women 50 and older every year.[18] Additionally, data for both age groups were analyzed by annual household income of less than $15,000, and $15,000 and greater.

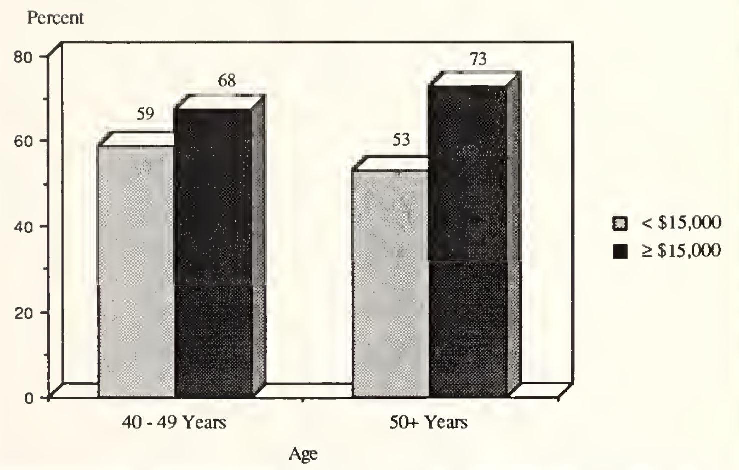

Figure 1. Prevalence (%) of Missouri women (1989-92) who reported ever having a mammogram, by age group and income level.

RESULTS

Figure 1 illustrates the percentage of women 40 years of age and older who responded "yes" to the question, "Have you ever had a mammogram?" In both age groups--40 to 49 and 50 and older, women with household incomes of less than $15,000 per year were less likely to have obtained a mammogram than those with household incomes of $15,000 or more. Older women from low income households were much less likely to obtain a mammogram than older women from higher income households.

Figure 2 depicts the percentage of women following the ACS recommendations for mammography. In both age groups, only about 1/3 of low income women had undergone mammography. A greater percentage of women from upper income families had followed ACS recommendations. However, among upper income families, older women were less likely than younger women to have followed ACS recommendations.

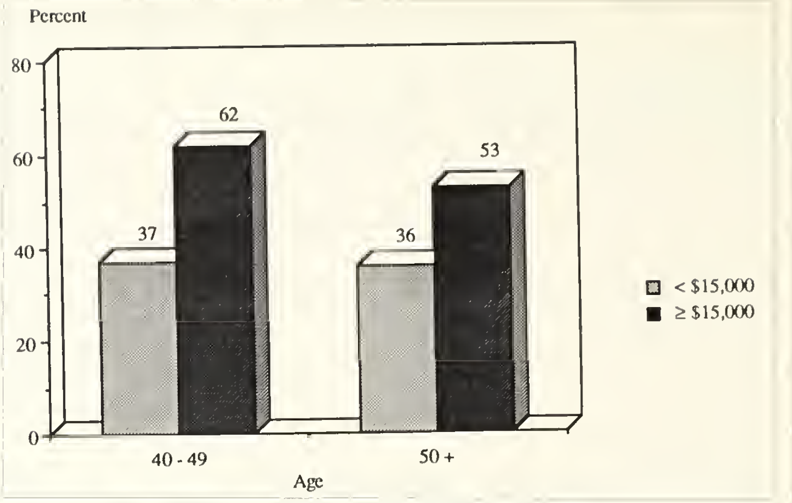

Figure 2. Prevalence (%) of Missouri women (1989-92) who reported having mammograms according to the recommended frequency, by age group and income.

A significant proportion (35%) of Missouri women 40 and older reported that they had never had a mammogram. We evaluated BRFSS data to identify the reasons given for not undergoing mammography screening. Figure 3 illustrates that almost half of the women thought that mammograms were not needed. The second most cited reason was that mammography was not recommended by a physician.

DISCUSSION

The utilization of mammography has been monitored in Missouri and throughout the nation for several years. An early review of three national surveys conducted between 1978 and 1983 found that only about 15 - 20% of American women 50 years of age and older had ever had a mammogram.[19] In 1987, the National Health Interview Survey revealed that 38% of women ages 40 and older reported ever having had a mammogram in their lifetime.[20]

A report of national BRFSS data for 1987 through 1989 found an increase in the proportion of women ages 40 and older ever having a mammogram with a median of 49% in 1987, 58% in 1988, and 63% in 1989.[21] However, there were wide variations from state to state. Overall, national data indicate an increase in the use of mammography, both in the percentage of women who have ever had a mammogram and those who have had a mammogram in the previous year.[22]

Findings in Missouri during our study period are similar to those throughout the nation. Our study found a statistically significant increase from 1989 to 1992 in the proportion of Missouri women who have ever obtained mammograms. This increase continued an earlier trend presented in a previous article.[23] Despite the increase in mammography utilization in Missouri, disparities exist among women of different income levels and age groups. Our current study found that low income and older women were less likely to follow the recommended screening guidelines. These findings are consistent with those of other researchers.[21,24,25]

Missouri women who had never had a mammogram provided two basic explanations why they had not been screened--they were not aware of the need, and their doctor had not told them to get a mammogram. These facts are strongly supported by other findings.[24,26-28] Despite the numerous public education messages designed to inform women of the need for regular mammography, it is quite evident that a physician's recommendation to have the test is a very influential factor.[29-31]

The results of this study are limited because BRFSS is a household telephone survey and not all households have telephones. Those households without telephones tend to include a higher proportion of groups such as the poor, rural residents, young, and minorities. As a result, these groups are underrepresented in the survey sample.[32]

Missouri now has funds available to provide free breast cancer screening to low income women via the Breast and Cervical Cancer Control Project. The Missouri Department of Health received funding in 1992 from the Centers for Disease Control and Prevention to provide clinical breast exams and screening and diagnostic mammograms to approximately 20,000 women per year. The grant includes matching funds from the state, the ACS, and others.

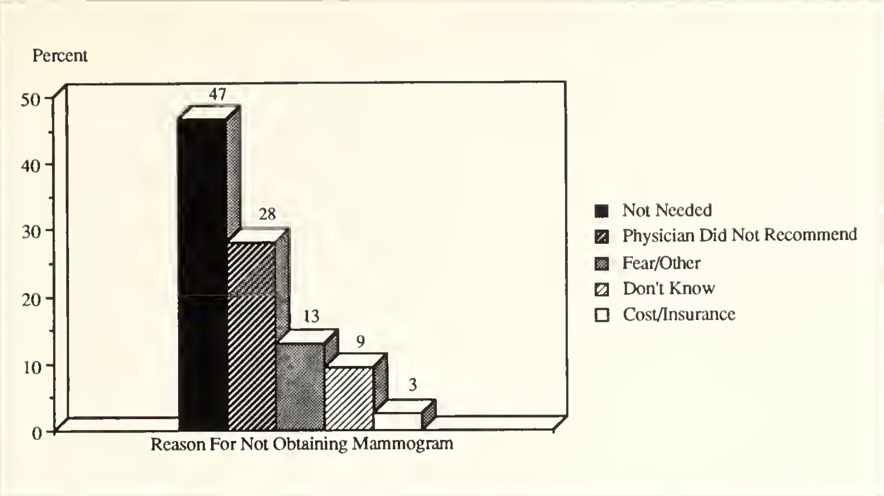

Figure 3. Prevalence (%) of Missouri women (1989-92) aged 40 years and older who reported not ever having mammography by reason.

Low income and minority women are the primary populations to be screened. The program contains strong public and professional education components. Contracts for mammography services and clinical breast exams are currently being established with public hospitals, federally funded community health centers, local health departments, and others. Cervical cancer screening is also provided by the project.

Despite strong epidemiologic evidence that early detection through mammography can reduce breast cancer mortality, a substantial percentage of Missouri women are not being screened according to recommended guidelines. However, mammography screening behavior can be strongly influenced by physicians, who have a major role to play in assuring that women receive age appropriate mammography and clinical breast examination. It is only through these efforts that Missouri will reach state and national year 2000 objectives to reduce breast cancer mortality.

Additional information about the Breast and Cervical Cancer Control Project may be obtained by calling the Missouri Department of Health at (314) 876-3273.

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Acknowledgements

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The Authors

Karen M. Northup, MSN, MPH, Ross C. Brownson, PhD, Robert A. Hagan, MS, Joan C. Wilkerson, BA, G. Stephen Nelson, BA are with the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, 201 Business Loop 70 West, Columbia, MO 65203; Tel. (314) 876-3233; FAX (314) 443-3592.

Reprint requests to Ms. Northup.

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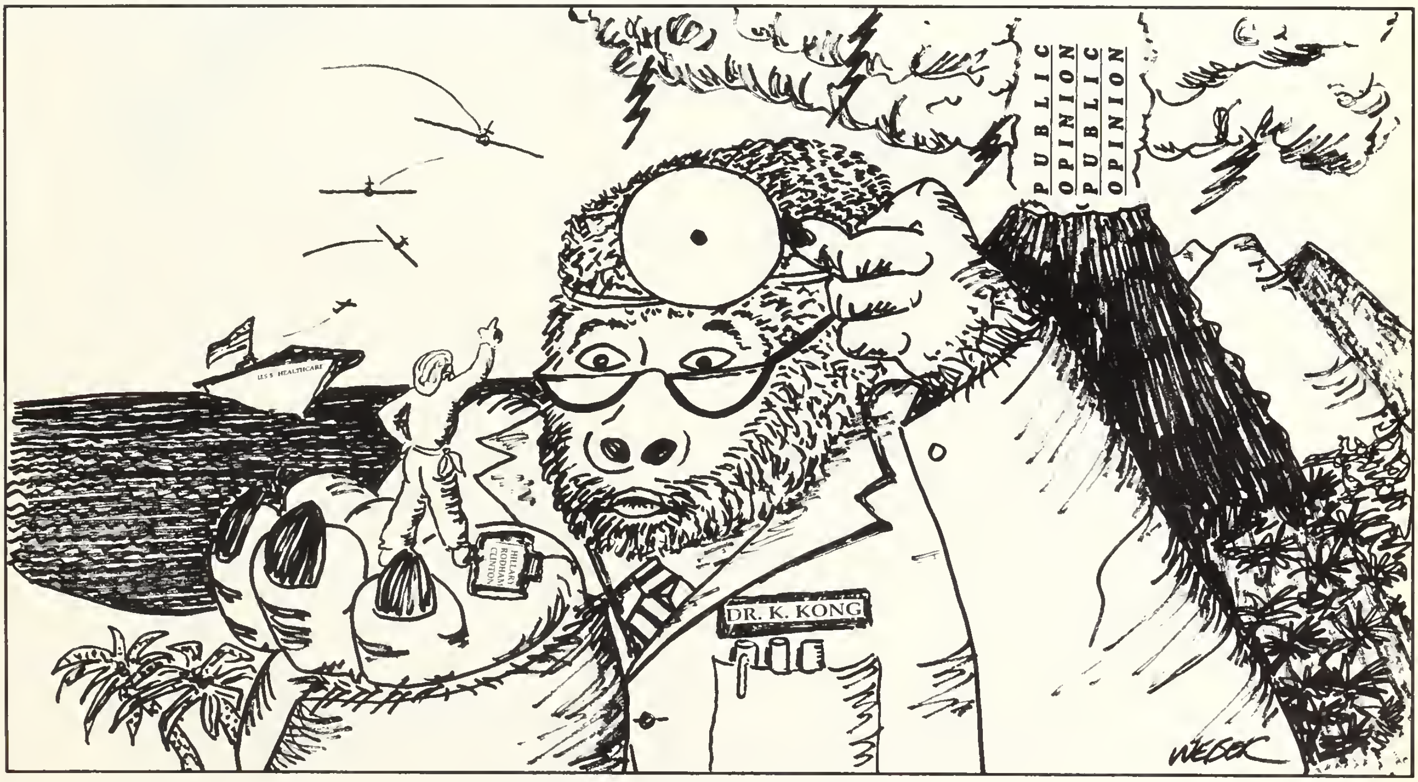
The President's Healthcare Reform Task Force resolves the problem



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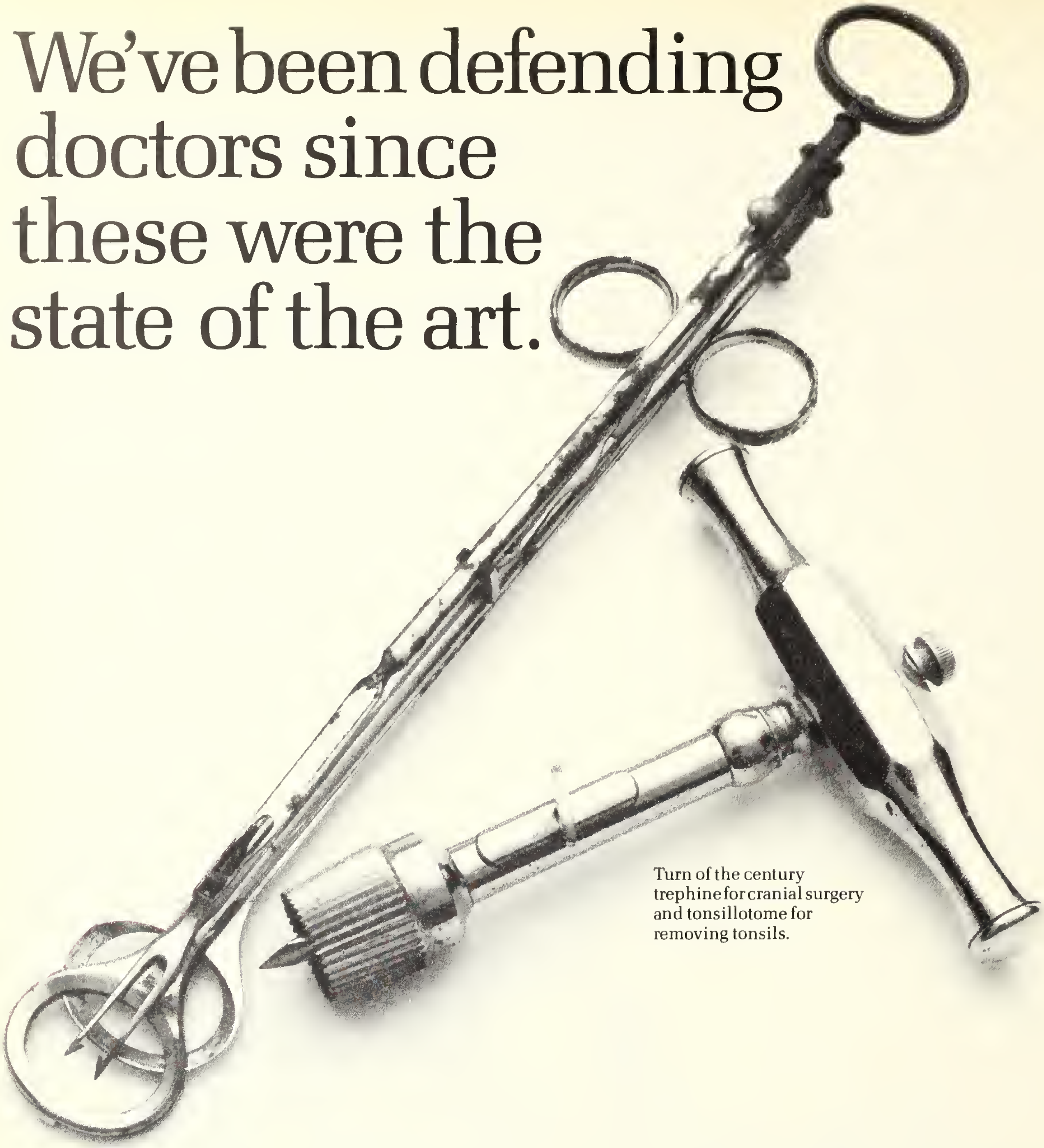

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Heart To Heart II

Dr. Fred Hahn, an Otolaryngologist from Independence, is a civilized and charitable man and, fortunately for the sick and dying in St. Petersburg, Russia, he believes in action, too. In January, Dr. Hahn joined five other Kansas City area physicians, fellow Rotarians, students, and others to deliver an airlift of 40-tons of medical supplies to several hospitals in St. Petersburg, Russia. Their program, "Heart to Heart II," followed a similar humanitarian operation called "Heart to Heart" that successfully delivered drastically needed supplies to Moscow citizens in mid-1992.

Shipment of the Heart to Heart II supplies was guided by the U.S. State Department. They arranged for a reserve military crew to pilot a C-5 cargo transport from Kansas City to St. Petersburg as part of a training mission. Transportation plans went smoothly except for a few days in January just before the material was to be shipped. The military placed a hold on the C-5 airplane because of the flair-up in the Middle East that occurred as President Bush was about to leave office. This freeze nearly sank the mission before it began.

"When we left on January 15, we didn't know if or when the bulk of the supplies that we had collected would follow us to Russia," Dr. Hahn said. "We hand-carried as much medicine as we could aboard our civilian airplane. The personal carry-on limit was 70 pounds and we filled duffle bags to the limit with the most critical medicines. If the Air Force couldn't follow us because of the world-wide military alert, we wanted to transport as much medicine as we could to St. Petersburg. Luckily, a few days later, our Heart to Heart II crew found a DC-9 that wasn't reserved for airlifting troops and the rest of our 40-ton shipment arrived about midway through our visit."

Every ounce was welcome. Working closely with their Russian counterparts, Heart to Heart II volunteers developed a list of most needed supplies and then spent last Fall contacting pharmaceutical manufacturers, hospitals and individuals. The volunteers were drawn mostly from the ranks of Kansas City area Rotary Clubs and were led by Dr. Gary Morsch, a primary care physician from Olathe. They collected "basic" drugs such as insulin and Silvardene, and disposable equipment such as syringes and sterile gloves - goods that medical professionals in the United States take for granted, but which are very dear in Russia at this time. Drug companies and other contributors either contributed their drugs and OTC goods free or at extremely deep discounted prices. Money for the purchases was raised by Kansas City area Rotary Clubs and many firms and individuals. Rotary International provided a grant to match the cash contributions.

After touching down in St. Petersburg, Dr. Hahn quickly observed that medicine is practiced differently in Russia.

"I visited several hospitals while I was in St. Petersburg," Dr. Hahn said. "Patients are routinely brought to the hospital as much as one week before surgery so that tests and lab work can be done. Gloves, IV needles and tubing are reused several times, there are no disposable materials. I didn't see

Dr. Fred Hahn, above, visits a typical ward in a St. Petersburg pediatric hospital. Nursing care, feeding and cleaning is provided by each child's mother who lives on the ward with her child during his or her stay.

The Heart to Heart II volunteers hand-carried medical supplies when it appeared the military flight might be delayed. Insulin in particular is in critically short supply. Russian hospital administrators, standing above, thank the volunteers.

any gas or steam sterilizers. It appears that all sterilization is done with antiseptic solutions. The hospitals do not have computers - not even p.c.'s.

"Instruments in one surgery suite that was ready for use were on a back table under what appeared to be 'clean' reusable linen. There was an ultraviolet light to 'sterilize the air.' During surgery, anesthetic was administered by a 'sister' who used a mask rather than an endotracheal tube. There were no monitors except for a young nursing assistant or aid who stood near the table with her finger on the pulse of the sleeping patient's outstretched arm."

Such grim conditions are the norm rather than the exception. Dr. Hahn and his group visited the only hospital in St. Petersburg (a city of 5 million people) where open heart procedures are performed and they were told that about 200 such operations are done at that facility each year. Dr. Hahn noted this is fewer then the number of heart procedures that might be done at a single average-sized hospital in the Kansas City metropolitan area. A pediatric cardiologist with the Heart to Heart II group learned that many heart cases that would be treated on a routine basis in the United States are considered inoperable in St. Petersburg. He was told that these patients must wait for nature to take its course.

Extended care for elderly patients consists of placing the old in hospital for the duration of their terminal illnesses. U.S. style networks of visiting nurses, nursing homes and social programs for caring for the elderly do not exist for most of the people in Russia.

"The doctors are well trained," Dr. Hahn said. "One of our interpreters was a young woman about 25 years old. She described herself as an oncologic surgeon. She completed a five-year medical school program after finishing high school and has the rank of a 'physician of the 3rd category.' After serving several years as a general MD, she was accepted into a fellowship in surgical oncology and is specializing in treating breast cancer. This fellowship takes two years and, if she successfully completes an additional five years of study, she may achieve 2nd category rank. Top administrative positions and professorships are reserved for 1st category physicians."

Dr. Hahn's guide lives with her parents in a small flat. Her pay is equivalent to $4 in US dollars per month. When she reaches 2nd category rank she can expect to be paid the equivalent of $10 per month.

As unconventional as the Russian medical system appears to a group of physicians from the American Midwest, Dr. Hahn did see at least one similarity. "The deputy head of a pediatrics hospital was talking to our group and the children clustered around him to share the excitement of our visit and gifts of medical supplies. As he thanked us and told us about the health care provided at his facility, he spontaneously hugged the children and affectionately patted them on their heads. His genuine concern for the physical well being of his young patients was the single factor that most closely linked the St. Petersburg health care system with our own."

Heart to Heart II is considering a delivery of medical supplies to Somalia as their next project.

HEART TO HEART INTERNATIONAL
HEART TO HEART INTERNATIONAL

Dr. Gary Morsch, left, and Dr. Fred Hahn before departure for St. Petersburg. Morsch later left the group to visit Somalia. Heart to Heart II is considering an airlift shipment to that country as their next relief project.

For Your Benefit

Coalition highlights the high cost of defensive medicine

The American Medical Association played a major role in a February Washington, D.C., news conference depicting the high cost of defensive medicine. According to survey data released at the conference, America could save some $36 billion over the next five years by eliminating defensive medicine practices. The National Medical LiabilityReform Coalition sponsored the conference.

A report released at the conference stated, "Defensive medicine is care that does not benefit the patient, and is provided solely to avoid malpractice claims."

The coalition's statement pointed out that any reform of the health care system must include liability reform to be complete and effective.

AMA is a major sponsor of the coalition, which includes more than 60 organizations from the business, insurance and medical sectors. Its goal: a compensation system to enhance the objective of quality, cost-effective health care available to all.

AMA presses for redefinition of expert testimony

In a friend of the court brief filed before the U.S. Supreme Court, the AMA advocates that the Court limit expert testimony to opinions founded in scientific knowledge or based on valid scientific methodology. The outcome of the *Daubert v. Merrell Dow Pharmaceuticals* case will determine the legal role of medical expert testimony.

"Expert" opinion without scientific basis has extremely negative effects on physicians, their patients and society as a whole—as well as on the legal process. The *Daubert* case involves expert testimony in product-liability suits that linked the morning sickness drug Benedectin to birth defects. Joining the AMA in this effort are 15 national medical specialty societies and the AMA/Specialty Society Medical Liability Project.

Prepared by the Department of Communications Services. For information, call 800 AMA-3211, ext. 4416.

Group practice growth depicted in AMA survey

The growth of group practices is illustrated in the AMA's newly published "Medical Groups in the U.S.—A Survey of Practice Characteristics." The 1993 edition of the ongoing survey describes the current population of medical group practices and highlights trends.

This growth trend—the number of physician groups has increased by 286 percent since 1965, and the number of physicians involved by 550 percent—has major implications. AMA Executive Vice President James S. Todd, MD, says the move toward group practice "will continue to change the American system of health care delivery and make practice groups important players in any health system reform agenda."

Besides statistical data, the book contains information on governance structure, reimbursement methods, and computerization. Copies are $50 for AMA members, $70 for non-members; call (800) 621-8335 and request OP390393CH.

AMA opposes provider tax

In a letter to HCFA Acting Administrator William Toby, the AMA underscores its opposition to provider taxes—fees imposed on physicians to increase state Medicaid or other revenues.

The AMA further says that final rules on Medicaid donations and health care-related taxes should prohibit imposing "voluntary" donations on physicians on behalf of a specific health care group The current rule fails to specifically forbid coercive donations as a condition of employment or staff privilege.

AMA pledges its opposition to health fraud

The AMA is prepared to work with the government to combat fraud and abuse in the health care field. That was the message to Congress delivered by AMA Trustee Jerald R. Schenken, MD, recently.

Appearing before the criminal justice subcommittee of the Senate Judiciary Committee, Dr. Schenken said the Association strongly agrees with a General Accounting Office recommendation calling for a national commission to develop comprehensive solutions to health insurance fraud and abuse.

He outlined ongoing AMA activities in the area, including cooperation with the FBI and the establishment of a fraud and abuse hotline. The AMA also supports changes in antitrust laws to eliminate barriers to medicine's ability to expand its professional self-regulation and enforcement role, Dr. Schenken told the panel.

ADVANCES IN THE TREATMENT OF CALCANEUS FRACTURE

by Jeffrey O. Anglen, M.D.

The calcaneus is the largest of the tarsal bones and the most commonly fractured, being involved in more than half of all major tarsal injuries. Intra-articular fractures of the calcaneus are seriously disabling and of significant economic consequences. Ninety percent of these injuries occur in working age men, most commonly industrial workers.[1] Many of these workers will never return to their jobs, and of those who do, 20% will be out for up to 3 years.[2] The optimal treatment for intra-articular fractures is controversial. However, in the past few years, progress has been made in understanding the nature of calcaneus fracture. The availability of computed tomographic scanning and improved surgical techniques has improved the outlook for many of these patients to return to productive activity.

The Os calcis bears the weight of the body from heel strike to foot flat in the gait cycle, functions as a lever arm for the action of the triceps surae, participates in the essential motions of the subtalar joint, and forms part of the lateral column of the foot. The subtalar joint, which is injured in about 75% of calcaneal fractures, functions as an oblique hinge, allowing the hindfoot to invert and evert to adapt to the walking surface and transmitting rotational moments from tibiotalar joint to the foot.

It has generally been accepted that extra-articular (not involving the subtalar joint) and non-displaced fractures do well with an early motion program following initial elevation and compression, but the prognosis of intra-articular fractures has been considered poor no matter what sort of treatment has been used.[3] Whether or not these fractures do better with open reduction and internal fixation remains controversial, in part due to the lack of consensus on classification, nomenclature, surgical indications and technique.

The initial evaluation of the injured heel relies upon review of plain films, including lateral, axial and subtalar (Broden's) views. Early classification schemes were based upon this information.[4] Landmarks from the plain films are used to calculate certain angles, particularly Bohler's and Gissane's angles, which give a rough measure of the severity and amount of displacement of the fracture (Fig. 1). This method of imaging the fracture has limitations due to the complex anatomy of the calcaneus, however, and has not proved prognostic.

A true understanding of the extent and pattern of these fractures was not available until the mid 1980s when reports began to appear about the use of computerized tomographic (CT) scanning for the evaluation of calcaneus fractures.[5-7] CT scanning has enabled the development of new classification systems which are expected to increase the prognostic accuracy and help in deciding between different treatment methods. Indeed, recent authors have characterized the large body of literature on calcaneus fractures written before the advent of CT scanning as "ambiguous at best."[7]

One way in which CT scanning has aided development of understanding is in the delineation of the mechanism of injury in calcaneal fracture. Although twisting and avulsing forces can cause some nonarticular calcaneus fractures, 80% to 90% of these injuries are caused by compressive forces such as those generated in a fall.[3] Bilateral calcaneus fractures occur in 5% to 9%, and associated injuries are common. As the calcaneus is loaded axially, the weight of the body is transferred through the talus, which sits on the calcaneus in a medially offset position. This offset position causes the posterolateral edge of the talus to fracture the calcaneus obliquely, forming the primary fracture line in an approximately sagittal plane.[8,9] This fracture line may or may not traverse the posterior facet of the subtalar joint; most commonly the fracture is intra-articular. The calcaneus is separated into two fragments: the body or tuberosity fragment, and the sustentacular or "constant" fragment, so named because it is this medial fragment which remains in the correct position with regard to the talus. Secondary fracture lines may be developed depending on the amount of force involved in the injury. The lateral portion of the posterior facet is frequently

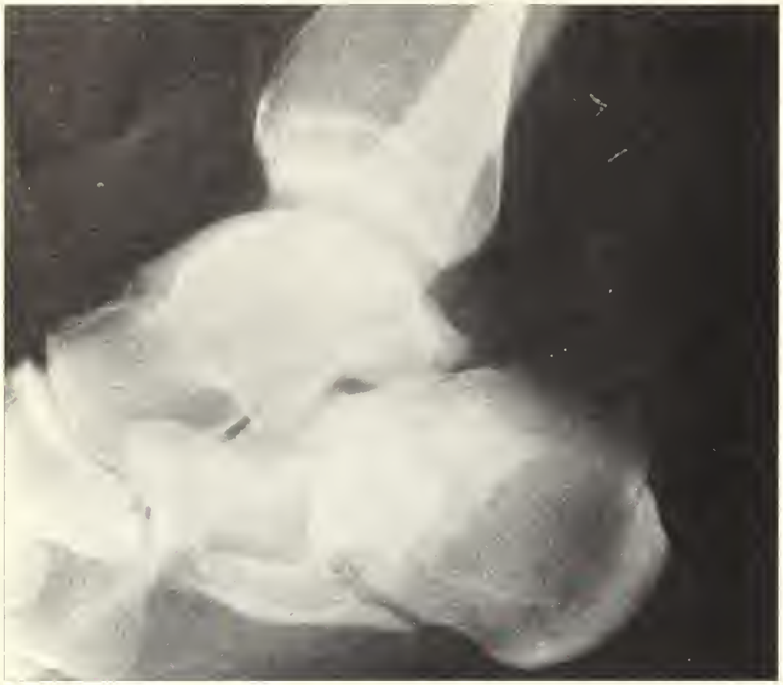


Figure 1A. A comminuted, displaced, intra-articular fracture of the Calcaneus. Note the flattening of the calcaneal shape, and the impaction and rotation of the posterior facet.

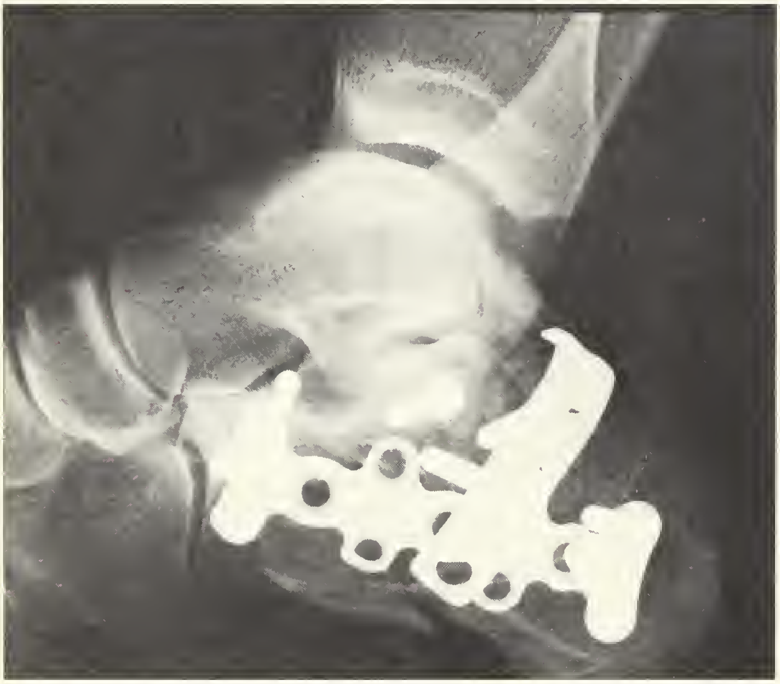
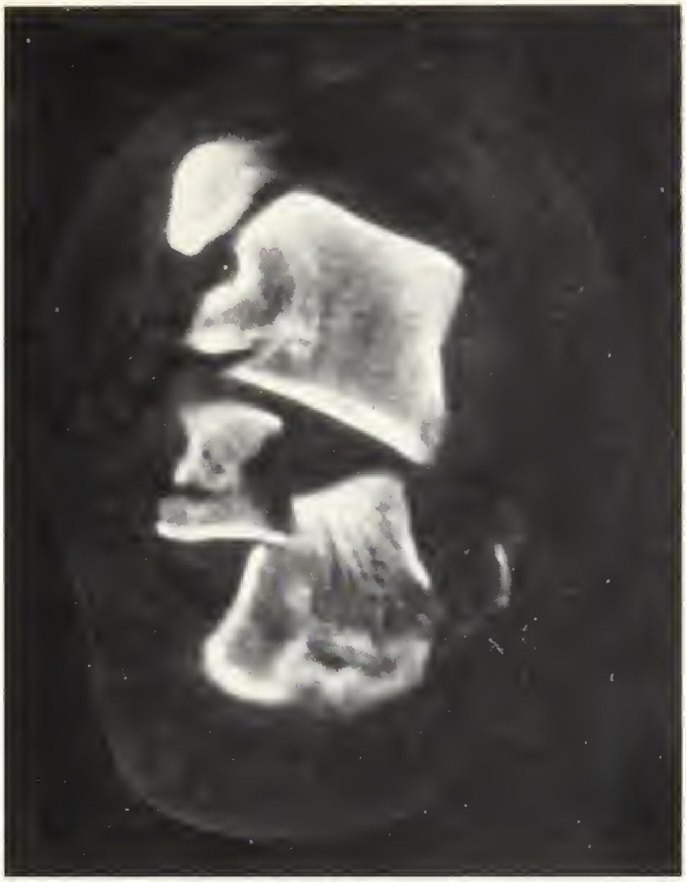


Figure 1B. Post-operative radiograph showing restoration of the height and length, reduction of the posterior facet and stabilization with plates.

broken free of the main body fragment, forming the "thalamic" or "superolateral" fragment, which may be driven into the cancellous bone of the body, often rotated as much as 90 degrees (Fig. 2). As it is driven into the body, the lateral wall of the calcaneus is "blown out," widening the heel and impinging upon or trapping the peroneal tendons. Often the lateral wall is comminuted and the tuberosity may be completely separated from the calcaneo-cuboid joint. The posterior facet fragment may be comminuted as well. All of these changes lead to a pattern of deformity which is relatively constant, but of varying severity: the heel becomes widened, shortened and malaligned into varus; the arch of the foot is flattened, the lever arm of the tendoachilles is shortened. In addition the subtalar joint becomes incongruous, and the function of the peroneal tendons is impaired.[9]

Böhler published the first classification system for calcaneal fractures in 1931. Twenty years later, Essex-Lopresti simplified and popularized that system when he divided intra-articular calcaneus fractures into "tongue" and "joint-depression" types.[10] Several subsequent classification schemes have been proposed, all somewhat limited by their basis on plain radiographs.[8,10] The first CT scan based classification, proposed in 1990 by Crosby and Fitzgibbons,[7] was based on the displacement and comminution of the posterior facet as seen on CT cuts in the coronal plane. Crosby and Fitzgibbons attempted to relate the results of their classification to the outcome after closed treatment of the fracture. Although several objections to their methodology have been raised by other investigators, it was the first attempt to use a classification system prognostically that was even partially successful. Sanders developed a classification scheme based on the pattern of the posterior facet fracture as seen on coronal CT scans.[8,11] With an average follow-up of 2 years, the scheme seems to be reliably prognostic regarding results after operative fixation in 120 patients reported. The author has subsequently used this classification in nearly 300 fractures of the calcaneus with consistent results.[12] Widespread use of a standard CT based classification plan will help to resolve some of the persistent controversies regarding treatment.

The philosophy of treatment has gone through many periods of change. Initially, the accepted method was rest and elevation. Early in this century, European surgeons began to experiment with open reduction and internal fixation, while in this country primary fusion was in vogue. In the 1950s and 1960s, the outcome of calcaneal fracture surgery came into question, and conservative treatment with an emphasis on early motion became standard care.



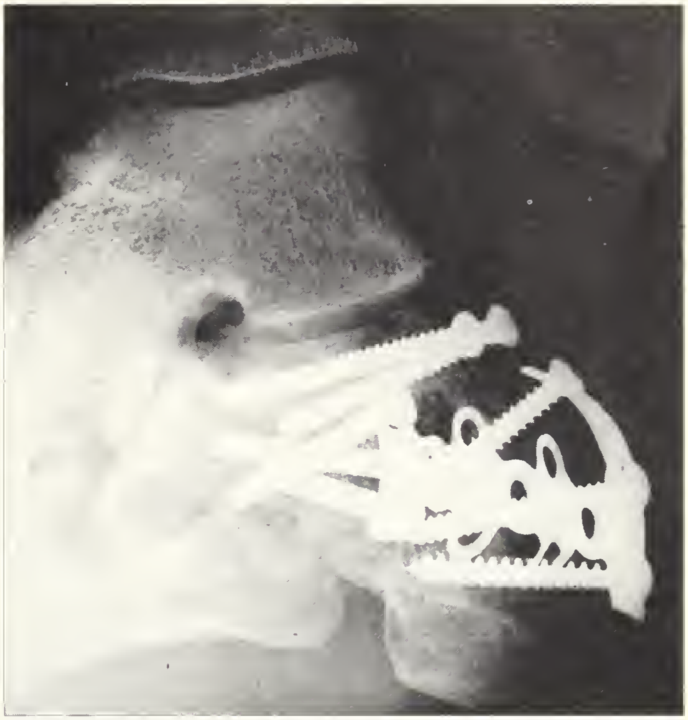


Figure 3. (above) Broden's view of the posterior facet of the subtalar joint, showing restoration of congruity post-operatively.

Figure 2. (left) Coronal plane CT scan of a Sanders type II fracture showing displacement and impaction of the posterior facet of the subtalar joint.

Now, surgical therapy is again gaining credibility, as reports of better results are appearing.[10] In general, the literature reports a wide range of outcomes following both open and closed treatment, with surgical treatment having 5% to 25% greater satisfactory outcome rate.[9] In addition to better imaging and increased understanding of fracture anatomy, improved surgical techniques have contributed to better outcome following surgical intervention. Experience in handling acutely traumatized soft tissues and a better appreciation of optimal timing for surgery have lessened the incidence of serious soft tissue complications. Calcaneal fracture usually is associated with significant swelling, and generally one must wait until this subsides before a safe approach can be made. The skin must pass the "wrinkle test",[11] which can take 7 to 10 days. During this time the extremity must be strictly elevated. Improved awareness of what bone-implant constructs are stable, and improved implants and instruments also have contributed.

Proponents of open reduction have been undecided regarding the optimal surgical approach. The medial approach was introduced in 1958 by McReynolds[13] and popularized by Burdeaux.[14] It offers the advantages of direct reduction on the medial wall, and the ability to accurately correct varus deformity. The fracture is usually less comminuted on the medial side and may lend itself more readily to stable fixation of cortical bone. However, this approach does not allow direct visualization of the subtalar joint reduction, is not extensile, and poses some risk to the neurovascular structures on that side of the hindfoot. It also may be more difficult to reduce the widening of the heel that results from lateral wall blowout.

Lateral approaches have been described by several authors[11,14-17] and have the advantages of being extensile, allowing access to the subtalar joint and calcaneocuboid joints, having reduced danger to neurovascular structures, and allowing compression of lateral bulging. It is somewhat more difficult to judge axial alignment, and the soft tissue dissection is more extensive; however, these problems may be minimized by waiting until the acute swelling has subsided prior to surgery and paying strict attention to technique--handling tissue gently, using thick skin-to-periosteum flaps, and minimizing retractor injury. We have found that most fractures are best approached laterally, using the right-angled approach described by Sanders,[11] and have not found a need for supplemental medial approaches, nor found problems with the soft tissues. Bone grafting of the cancellous defect is controversial, but recently authors have reported good results without it using modern

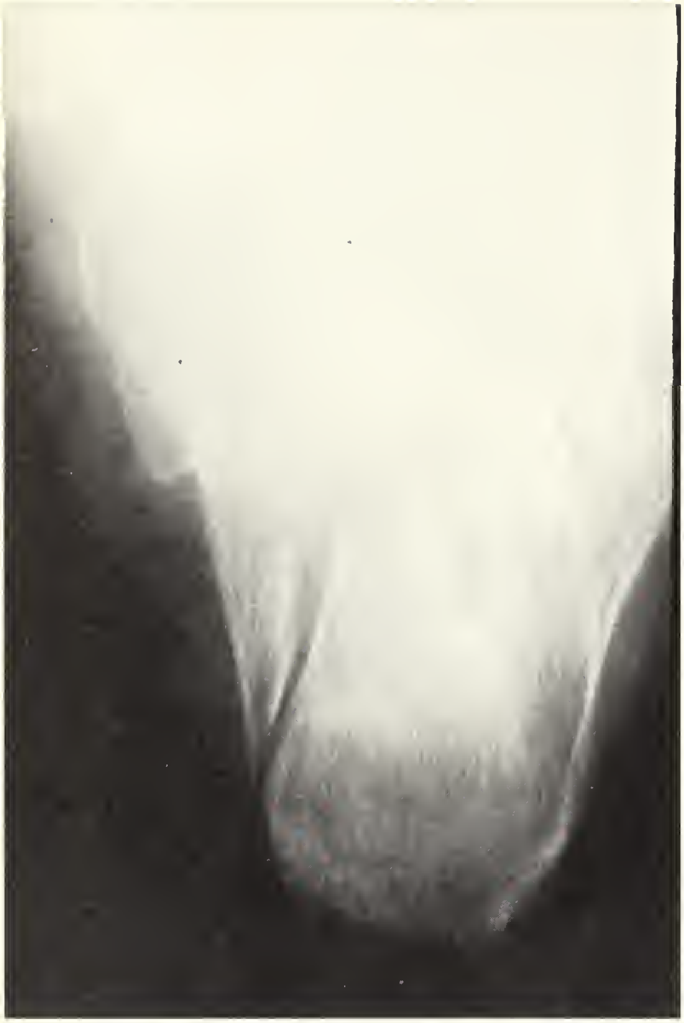


Figure 4A. Pre-operative axial view showing shortening, over-riding of the medial cortex, and varus alignment.

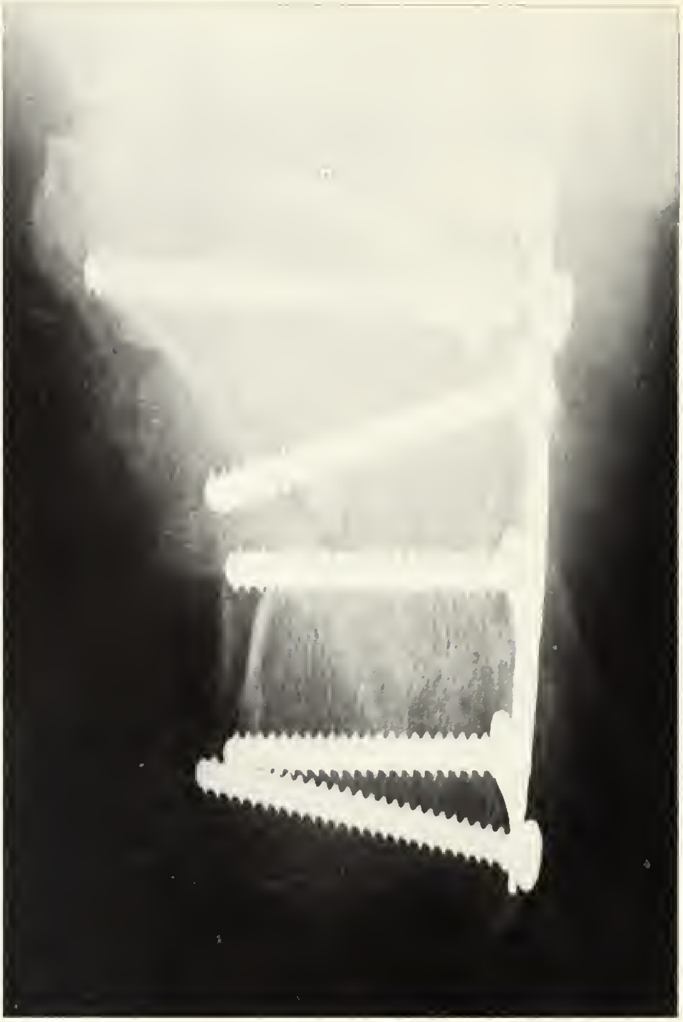


Figure 4B. Post-operatively the height is restored and alignment corrected. Note screws in the sustentaculum talus.

internal fixation devices. No study has directly compared grafted to non-grafted fractures, yet this lack of data has not deterred some authors from expressing strong opinions on the issue.

Whichever approach is selected, the goals of surgery are anatomic reduction of the subtalar joint (Fig. 3), restoration of heel shape and alignment (Fig. 4), reduction of push-off weakness by restoring the Achilles lever arm, elimination of fibular impingement on the peroneal tendons, and fixation which is stable enough to allow early motion, yet not overly bulky. If these goals can be achieved, and the fracture through the subtalar joint is relatively simple (Sanders type II), good results can be expected.

Sometimes, however, the outcome will be less satisfactory despite an acceptable operative result. This may be due to excessive comminution of the articular surface (Sanders type III or IV) and irreversible damage to the joint cartilage. In such cases, closed or open reduction should be employed in order to restore the shape of the heel, and if the joint cannot be restored adequately, the patient should be counseled about to expected need for later subtalar arthrodesis. Although some have suggested primary fusion in this situation, that would seem to be somewhat fatalistic in view of the difficulty forecasting outcome and variability in patient tolerances. In any case, early motion is an essential part of the care of these injuries.

Intra-articular fractures of the Os Calcis, which have long been poorly understood and felt to have an unavoidable poor prognosis, have in the past few years yielded their secrets to the CT scanner and improved surgical techniques. While there are still some unresolved controversies, we now have reliable procedures which will benefit a large percentage of injured patients. There is a significant learning curve with this operation, estimated by Sanders to be about 35 cases or two years, after which a surgeon can count on improved, consistent results. This suggests that the surgeon who is only occasionally confronted with this fracture may want to consider referral to a trauma center. With optimal management, a significant number of patients will return to productive, pain-free activity. Prototype implants are now being evaluated which will allow more stable fixation with less bulk. The years to come will indubitably yield further improvements as more experience is gained.

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The Author

Jeffrey O. Anglen, MD, is the chief of the Orthopedic Trauma Service at the University of Missouri Hospitals and Clinics, Columbia, Missouri.

Reprint requests to Dr. Anglen, University of Missouri-Columbia, Department of Surgery, Division of Orthopedic Surgery, One Hospital Drive, Columbia, Missouri 65212, (314) 882-3104.

Transvaginal Electron Beam Cone Used in Treating an Advanced Squamous Cell Carcinoma of the Cervix

by Richard H. Matthews, PhD, MD, Nuran Ercal, MD, PhD and H. Jerry Murrell, MD

The transvaginal electron beam cone technique was employed to deliver an additional or "boost" dose to a bulky stage IV-A squamous cell carcinoma of the cervix treated by definitive radiotherapy techniques. The tumor regressed, the patient remaining free of carcinoma until her death due to myocardial infarction more than two years later.

Transvaginal cone radiotherapy has been used for a number of years at various centers in treating selected cases of squamous cell carcinoma of the cervix. The procedure consists of introducing a cylindrical cone into the vagina with the help of an obturator (Figure 1) and working the end of the cone into position on or surrounding the target tumor tissue, after which a radiation machine is docked to the cone (Figure 2) and the radiation treatment delivered, using a beam quality that will fall off in dose in a short distance so that only the tumor tissue receives an appreciable dose (Figure 3). Transvaginal cone radiotherapy has been employed for a variety of indications: to staunch bleeding[1-3] as a boost on a bulky exophytic tumor,[1,2,4] in treating a cancer of the cervical stump,[2,5] as a boost in treating a bulky infiltrative barrel-shaped tumor,[1] and as a treatment of carcinoma in situ.[6] In the case to be discussed, three of the foregoing indications to treat were present: bulky exophytic lesion protruding down the vagina, bleeding, and barrel-shaped bulky infiltrative lesion.

CASE REPORT

P was a 48-year-old white woman at the time of her referral in April 1989 to one of the academic institutions in Missouri complaining of irregular vaginal bleeding two years. Her original evaluation at the facility included pelvic exam, urinalysis, CBC, CT scan of the abdomen and pelvis, and cystoscopy with a biopsy of the bladder. Subsequent PCRMC review of pathology slides from procedures of 4/7/89 confirmed moderately differentiated squamous cell carcinoma from the bladder, consistent with cervix primary. The patient gave a history of positive for pelvic infections of unspecified nature and admitted to smoking a pack per day for thirty years. She also gave a past medical history including some leg weakness secondary to earlier polio, thrombophlebitis, peptic ulcer disease, and occasional cardiac acceleration. The patient denied diabetes, hypertension, connective tissue diseases or prior treatment by irradiation. Physical exam revealed a large indurated cervix approximately 6 cm in diameter with some friable exophytic component and extension to the left pelvic side wall; the nature and extent of tumor extension to the right was more difficult to ascertain on physical exam. The disease also extended anteriorly. Introduction of the speculum lead to urine entering the vagina, apparently from a small fistula. A right

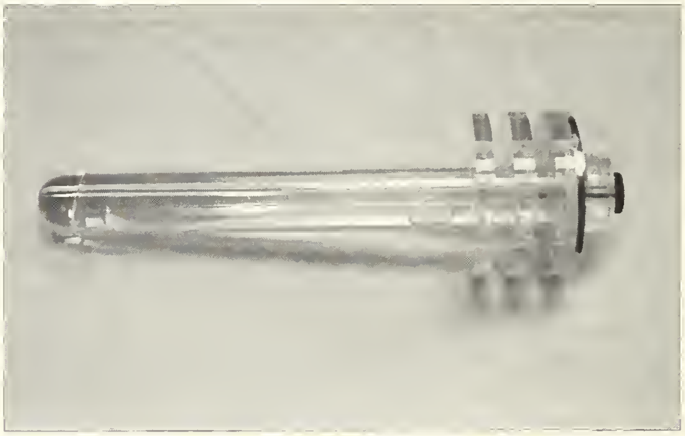

Figure 1: A 3.8 cm diameter transvaginal cone, 15° bevel, shown with the obturator in place.

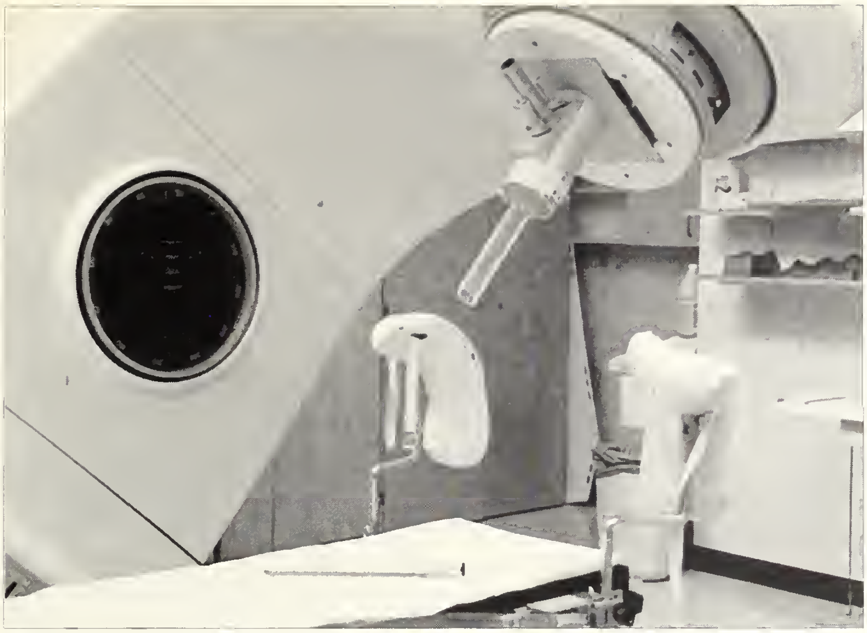
Figure 2: A transvaginal cone shown docked to the gantry of the linear accelerator with a special adaptor fitted with a periscope to aid in verifying correct position; the radiation treatment table is equipped with stirrups.

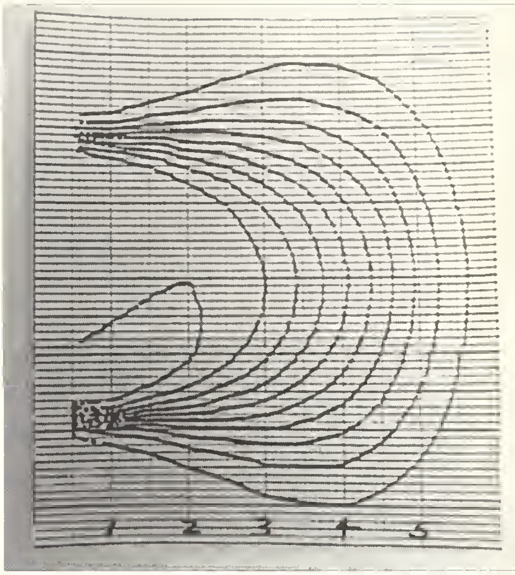

Figure 3: Isoionization curves with depth for a 3.9 cm transvaginal cone, 15 x 15 collimator setting, using a 12 MeV electron beam. Depth in water is shown in cm. Curves from the left to right represent decile percentage curves from 100% to 10% dose.

nephrostomy tube had been placed at the academic institution in view of right hydronephrosis. The patient apparently had stage IV-A squamous cell carcinoma of the cervix, and a plan of management was decided upon in which teletherapy would be carried out at PCRMC to be followed by brachytherapy at the academic institution. The patient was started on a plan of pelvic irradiation, intending to deliver 45 Gy TD in 25 fractions of 18 MV X-rays. The patient complained of recurring vaginal bleeding during the first two weeks of her teletherapy. The decision was made to interdigitate two transvaginal electron beam cone applications into the teletherapy course in view of the bleeding, the exophytic component, and the bulk of the tumor. The patient was placed in lithotomy position using stirrups bracketed to the radiation treatment table (Figure 2), a 3.8 cm electron beam cone with a 15° bevel was introduced using an obturator, the obturator withdrawn, capturing the cervical cancer in the end of the cone. The accelerator gantry was docked to the cone and positioning re-checked using a periscope. 500 cGy TD of 16 MeV electrons, TD figured at the 90% isodose line, were then delivered. The cone was then removed, patient tolerating the procedure well. The procedure was repeated two days later. The teletherapy portion of the treatment was completed at PCRMC and the patient then underwent two brachytherapy insertions at the academic institution. The patient was seen in follow-up at both institutions on a more-or-less regular basis, with regression of her bulky tumor noted. Leakage of urine with vaginal speculum pressure and repeated urinary tract infections made it evident that a small fistula persisted. The patient in late December 1991 was found in a state of cardiac arrest; cardiac function was recovered by emergency measures, but the patient was declared brain dead on 12/24/91. The death was attributed to myocardial infarction by the patient's internists with no evidence having been found for recurrence of her advanced squamous cell carcinoma of the cervix at greater than two and a half years following diagnosis.

DISCUSSION

The rationale for the use of the transvaginal cone technique has been to use orthovoltage or electron beams which have more limited depth of penetration than high energy X-rays or 60_{Co} (Figure 3), to use a cone technique which will allow a large boost dose to be delivered directly to a bulky tumor with little burden to normal tissues, and hence to get in this boost dose without figuring the dose against normal tissue tolerance. Seider and coworkers[1] studied the question of whether there was an increase in complication rates with use of the cone and concluded that there was no significant increase in complications. In that series of 159 patients with somewhat bulkier than usual disease, the authors reported 5-year local control and absolute survival rates of 82 and 83%. The patient in the present case experienced clearance of local-regionally advanced disease and died of an unrelated problem two and a half years after treatment. It is apparent from the dates in the reference list that the transvaginal cone is not a new technique; however, it is now overlooked in many centers. This is unfortunate in that it may have a worthwhile advantage for bulky or bleeding, or exophytic cancers of the cervix.

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The Authors

Drs. Matthews and Ercal are with the Phelps County Regional Medical Center and the University of Missouri-Rolla, department of chemistry. Dr. Murrell is with the University of Missouri-Columbia's department of radiation therapy.

Reprint requests to Dr. Matthews, 1000 W. Tenth St., Rolla, MO 65401.

PHYSICIAN RECOGNITION AWARDS

The Physician Recognition Award is presented by the Missouri State Medical Association and the American Medical Association to physicians who voluntarily complete 150 hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

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Craig W. Williams, *Cape Girardeau*

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Chariton-Macon-Monroe-Randolph

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Joseph A. Werth, *Jefferson City*

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Thomas W. Froehlich, *Springfield*
Mark L. Jary, *Ozark*
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Henry

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Jasper

David L. Sraub, *Joplin*

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Jerry L. Meyer, *Concordia*

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Melvin N. Abend, *Kansas City*
Tapan K. Chaudhuri, *Raytown*
Kendrick C. Davidson, *Kansas City*
Herbert E. Dempsey, *Lees Summit*
Jack Edmisten, *Nevada*
Lawrence L. Evans, *Kansas City*
James K. Fisher, *Kansas City*
Charles P. Gauthier, *Kansas City*
Campbell P. Howard, *Kansas City*
Charles R. Kelly, *Kansas City*
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Teodoro C. Tang, *Salem*

Northeast

Hirematthada Jayanandaiah,
Hannibal

Northwest

Manuel W. Runez, *Maryville*

Pike

Lawrence G. Stuerman, *Louisiana*

St. Charles-Lincoln

Gary J. Meltz, *St. Charles*

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John M. Bedwinek, *Kirkwood*
Clifford A. Birge, *Richmond Heights*
Jeffrey L. Craver, *Bridgeton*
Eileen Duggan, *St. Louis*
James E. Edwards, *St. Louis*
Thomas F. Egan, *St. Louis*
Akira Iwane, *Chesterfield*
Stanley W. Kim, *St. Louis*
William W. Kim, *St. Louis*
Russell R. Kraeger, *St. Louis*
Marvin E. Levin, *Chesterfield*
Charles A. Molden, *Bridgeton*
Alejandro C. Ojascastro, *St. Louis*
Paul M. Packman, *St. Louis*
Daniel Phillips, *St. Louis*
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■ **Mitchel L. Bartnick, MD,** St. Louis, Missouri, died February 10, 1993, at age 83. Dr. Bartnick received his medical degree at St. Louis University School of Medicine in 1937. He worked as a general practitioner in St. Louis for 53 years before retiring in 1990. Dr. Bartnick was on the staffs of St. Anthony's Medical Center, Alexian Brothers Hospital and the old Park Lane and Booth Memorial hospitals. He was a captain and physician in the Army Air Forces during World War II, specializing in reconstructive surgery. Dr. Bartnick was a member of the World Medical Association, St. Louis Metropolitan Medical Society and the Missouri Academy of Family Physicians.

■ **George Ittner Jr, MD,** St. Louis, Missouri, died February 2, 1993, at age 83. Dr. Ittner received his medical degree at Washington University School of Medicine in 1937. He practiced medicine as an internist for 52 years before retiring in 1989. Dr. Ittner was on the staffs of Deaconess Hospital and the old St. Luke's Hospital. During War World II, he served as a physician in the Missouri National Guard.

■ **John E. Lamy, MD,** Sedalia, Missouri, died January 8, 1993, at age 81. Dr. Lamy received his medical degree at McGill University, Montreal, Quebec, Canada, in 1937. During World War II, he served with the medical detachment of the 57th Infantry, Philippine Scouts, until the fall of Bataan in 1942. Part of the Bataan Death March, Dr. Lamy was held in Japanese prisoner war camps in the Philippines and Japan until the war ended in 1945. He was decorated with the Purple Heart and Silver Star. Dr. Lamy practiced surgery in Sedalia until retirement in 1985. Dr. Lamy was a member of the American College of Emergency Physicians and a fellow of the American College of Surgeons.

■ **Robert H. Mitchell, MD,** Overland Park, Kansas, died February 22, 1993, at age 82. Dr. Mitchell received his medical degree at Washington University School of Medicine, St. Louis, in 1936. He served in the Army Medical Corps during World War II. Dr. Mitchell, an obstetrician and gynecologist, served on the medical staff of Trinity Lutheran Hospital and formerly was on the medical staffs of St. Mary's Hospital in Kansas City and Shawnee Mission Medical Center. He was a member of the Metropolitan Medical Society of Greater Kansas City, the Missouri Medical Association, the Southern Medical Association and the American Medical Association.

■ **George E. Scheer, MD,** Richmond Heights, Missouri, died February 7, 1993, at age 74. Dr. Scheer received his medical degree at Washington University in 1943. After wartime service in the Navy he returned to St. Louis, performing orthopedic surgery on veterans and children. He was a chief surgeon at Shriners Hospital from 1957 to 1976. Dr. Scheer was a member of the Clinical Orthopedic Society and the American Academy of Orthopaedic Surgeons.

NEW MEMBERS

❖ **Anthony N. Avallone, MD,** 3231 S. National Ave., Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Avallone received his medical degree at the University of California, San Francisco, CA, in 1982. He completed his residency at the M.D. Anderson Hospital & Tumor Institute, Houston, TX. Dr. Avallone specializes in urology.

❖ **Daniel J. Baumann, MD,** 1035 Belleone, #500, St. Louis, MO 63117, has become a member of the St. Louis Metropolitan Medical Society. Dr. Baumann received his medical degree at St. Louis University in 1986. He completed his residency at St. Louis University. Dr. Baumann specializes in obstetrics and gynecology.

❖ **G. Scott Brehm, MD,** 2817 McClelland Blvd. #123, Joplin, MO 64804, has become a member of the Jasper County Medical Society. Dr. Brehm received his medical degree at the University of Kentucky, Lexington, KY, in 1986. He completed his residency at the University of Oklahoma, Oklahoma City, OK. Dr. Brehm specializes in urology.

❖ **David E. Chalk, MD,** 800 E. 5th St., Suite 202, Washington, MO 63090, has become a member of the Missouri State Medical Association. Dr. Chalk received his medical degree at the University of Kentucky, Lexington, KY, in 1985. He completed his residency at St. Louis University Hospital. Dr. Calk specializes in orthopedic surgery.

❖ **Robert E. Cuddihee, MD,** 621 S. New Ballas Rd., St. Louis, MO 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Cuddihee received his medical degree at St. Louis University in 1963. He completed his residency at St. John's Mercy Medical Center. Dr. Cuddihee specializes in internal medicine.

❖ **A. E. Daniel, MD,** 33 E. Broadway, Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Daniel received his medical degree at the Medical College, Trivandrum University, Trivandrum, Karala, India, in 1966. He completed his residency at the University of Missouri-Columbia. Dr. Daniel specializes in psychiatry.

❖ **Michael J. DeRosa, MD,** 2821 N. Ballas, Town & Country, MO 63131, has become a member of the St. Louis Metropolitan Medical Society. Dr. DeRosa received his medical degree at St. Louis University in 1984. He completed his residency at St. Louis University. Dr. DeRosa specializes in obstetrics and gynecology.

❖ **Jagadishwar Devkota, MD,** 3212 Shoreside Dr., Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Devkota received his medical degree at the Kasr El Aini Faculty of Medicine, Cairo University, Cairo, Egypt, in 1969. He completed his residency at St. Vincent's Medical Center, New York, NY. Dr. Devkota specializes in diagnostic radiology.

❖ **Daniel S. Duick, MD,** 1435 Mt. Auburn Rd., Cape Girardeau, MO 63701, has become a member of the Cape Girardeau County Area Medical Society. Dr. Duick received his medical degree at Northwestern University, Chicago, in 1967. He completed his residency at Walter Reed Hospital, Washington, DC. Dr. Duick specializes in endocrinology.

❖ **Joseph M. Evans, MD,** 711 Grand, Hannibal, MO 63401, has become a member of the Northeast County Medical Society. Dr. Evans received his medical degree at Indiana University, Indianapolis, IN, in 1983. He completed his residency at St. Joseph Mercy, Pontiac, MI. Dr. Evans specializes in surgery.

❖ **Bernard G. Ewigman, MD,** 601 Business Loop 70 W, #218, Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Ewigman received his medical degree at the University of Missouri-Columbia, in 1979. He completed his residency at the University of Missouri. Dr. Ewigman specializes in family practice.

❖ **Russell W. Faria, DO,** 1021 Southwest Blvd., Suite C-2, Jefferson City, MO 65109, has become a member of the Cole County Medical Society. Dr. Faria received his doctor of osteopathy at the College of Osteopathic Medicine & Surgery, Des Moines, IA, in 1981. He completed his residency at the Cleveland Clinic Foundation, Cleveland, OH. Dr. Faria specializes in anesthesiology.

❖ **Anne B. Fitzsimmons, MD,** University of Missouri, Dept. of Family & Community Medicine, One Hospital Drive, Columbia, MO 65212, has become a member of the Boone County Medical Society. Dr. Fitzsimmons received her medical degree at the University of Missouri-Columbia in 1986. She completed her residency at the University of Missouri-Columbia. Dr. Fitzsimmons specializes in family practice.

❖ **Terry L. Gallion, MD,** 4121 W. 83rd St., #132, Prairie Village, KS 66208, has become a member of the Missouri State Medical Association. Dr. Gallion received his medical degree at Baylor College of Medicine, Houston, TX, in

1982. He completed his residency at Baylor College. Dr. Gallion specializes in thoracic and cardiovascular surgery.

❖ **Debra A. Gusnard, MD,** 11133 Dunn Rd., Dept. of Radiology, Christian Hospital NE, St. Louis, MO 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Gusnard received her medical degree at the University of Chicago-Pritzker in 1982. She completed her residency at the University of Chicago. Dr. Gusnard specializes in diagnostic radiology.

❖ **Todd K. Howard, MD,** #1 Barnes Hospital Plaza, 6107 Queeny Tower, St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Howard received his medical degree at the University of Cincinnati, Cincinnati, OH, in 1981. He completed his residency at Maine Medical Center, Portland, ME. Dr. Howard specializes in surgery.

❖ **Joseph H. Jacob, MD,** Ellis Fischel, Dept. of Gynecology, 115 Bus. Loop 70 W, Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Jacob received his medical degree at the University of Missouri-Columbia, in 1983. He completed his residency at the University of Missouri-Columbia. Dr. Jacob specializes in gynecology.

❖ **Peter E. Krucylek, MD,** 3635 Vista Ave., St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Krucylek received his medical degree at the University of Pennsylvania, Philadelphia, in 1987. He completed his residency at the University of Pennsylvania. Dr. Krucylek specializes in anesthesiology.

❖ **Ted A. Lennard, MD,** 3800 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Lennard received his medical degree at LSU School of Medicine, Shreveport, LA, in 1987. He completed his residency at the University of Arkansas, Little Rock. Dr. Lennard specializes in physical medicine & rehabilitation.

❖ **Rodney D. Lentz, DO,** 1400 Southwest Blvd., Ste B, Jefferson City, MO 15109, has become a member of the Cole County Medical Society. Dr. Lentz received his doctor of osteopathy at Kirksville College of Osteopathic Medicine in 1974. He completed his residency at the University Hospital, Kansas City, MO. Dr. Lentz specializes in obstetrics and gynecology.

❖ **James M. Lynch, MD,** 1030 McIntosh Circle, Joplin, MO 64804, has become a member of the Jasper County Medical Society. Dr. Lynch received his medical degree at the Universidad Technologica de Santiago, Escuela de Medicina, Santiago, Dominican Republic in 1984. He completed his residency at St. Luke's Regional Medical Center, St. Louis. Dr. Lynch specializes in internal medicine.

❖ **Larry D. McIntire, DO,** 2727 E. 32nd, Suite 5, Joplin, MO 64804, has become a member of the Jasper County Medical Society. Dr. McIntire received his doctor of osteopathy at Kirksville College of Osteopathic Medicine in 1971. He completed his residency at Kirksville Osteopathic Medical Center. Dr. McIntire specializes in otolaryngology.

❖ **Randall E. Mitchem, DO,** 1125 Madison, Jefferson City, MO 65101, has become a member of the Cole County Medical Society. Dr. Mitchem received his medical degree at the University of Health Sciences College of Osteopathic Medicine, Kansas City, MO, in 1987. He completed his residency at the University of Missouri-Kansas City. Dr. Mitchem specializes in internal medicine.

❖ **William T. Perryman, MD,** 3525 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Perryman received his medical degree at the University of Oklahoma, Oklahoma City, in 1967. He completed his residency at Georgetown University Medical Center, Washington, DC. Dr. Perryman specializes in ophthalmology.

❖ **Kathleen A. Presutto-Nelson, MD,** 2828 N. National, Springfield, MO 65803, has become a member of the Greene County Medical Society. Dr. Presutto-Nelson received her medical degree at the University of California Los Angeles, in 1983. She completed her residency at Los Angeles County Harbor UCLA Medical Center, Torrance. Dr. Presutto-Nelson specializes in anesthesiology.

❖ **Brock D. Ridenour, MD,** 517 S. Euclid Ave., Box 8115, St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Ridenour received his medical degree at Tulane University, New Orleans, LA, in 1985. He completed his residency at the University of Washington, Seattle, WA. Dr. Ridenhour specializes in otolaryngology.

❖ **Barry A. Rose, MD,** 1000 E. 50th St., Suite 110, Kansas City, MO 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Rose received his medical degree at the University of Kansas School of Medicine, Lawrence-Kansas City in 1979. He completed his residency at the Kansas University Medical Center. Dr. Rose specializes in orthopedic surgery.

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❖ **Thomas W. Rossiter, MD,** 3231 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Rossiter received his medical degree at the University of Iowa, Iowa City, in 1989. He completed his residency at St. Mary's Health Center. Dr. Rossiter specializes in internal medicine.

❖ **Jorn F. Sanfelippo, MD,** 200 St. Mary's Medical Plaza, Jefferson City, MO 65101, has become a member of the Cole County Medical Society. Dr. Sanfelippo received his medical degree at the University of Health Science, Chicago, Il, in 1972. He completed his residency at the University of Missouri-Columbia. Dr. Sanfelippo specializes in internal medicine.

❖ **William Selezinka, MD,** 3655 Vista Ave., St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Selezinka received his medical degree at the University of Alberta, Edmonton, Alberta, Canada, in 1957. He completed his residency at the University of Michigan, Ann Arbor. Dr. Selezinka specializes in ophthalmology.

❖ **Donald C. Spencer, MD,** 110 N. Hospital Dr., Fulton, MO 65251, has become a member of the Boone County Medical Society. Dr. Spencer received his medical degree at the University of California Los Angeles, in 1977. He completed his residency at the University of Missouri-Columbia. Dr. Spencer specializes in family medicine.

❖ **Steven M. Strasberg, MD,** 6107 Queeny Tower, Box 8109, #1 Barnes Hospital Plaza, St. Louis, 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Strasberg received his medical degree at the University of Toronto, Toronto, Canada, in 1963. He completed his residency at the University of Toronto. Dr. Strasberg specializes in general surgery.

❖ **Bruce I. Tetalman, MD,** Heartland Hospital East, 5301 Faraon St. #301, St. Joseph, MO 64501, has become a member of the Buchanan County Medical Society. Dr. Tetalman received his medical degree at the University of Cincinnati, Ohio, in 1971. He completed his residency at Emory University Hospitals, Atlanta, GA. Dr. Tetalman specializes in physical medicine and rehabilitation.

❖ **Maria D. Thomas, MD,** 440 S. Market, Springfield, MO 65806, has become a member of the Greene County Medical Society. Dr. Thomas received her medical degree at the Faculdade de Medicina Universidade Federal de Alagoas, Maceio, Alagoas, Brazil, in 1975. She completed her residency at the University of Missouri-Columbia. Dr. Thomas specializes in child & adolescent psychiatry.

❖ **Juliette A. Vestal, MD,** 3231 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Vestal received her medical degree at the University of Missouri-Kansas City, in 1988. She completed her residency at Washington University, Barnes Hospital, St. Louis. Dr. Vestal specializes in obstetrics and gynecology.

❖ **Marc M. Whitacre, MD,** 6650 Troost Ave., Suite 300, Kansas City, MO 64131, has become a member of the Missouri State Medical Association. Dr. Whitacre received his degree at the University of Pennsylvania, Philadelphia, in 1969. He completed his residency at the University of Colorado, Denver. Dr. Whitacre specializes in ophthalmology.

RESIDENTS

Laura N. Bealer, MD - *Ophthalmology*
Adam E. Berger, MD - *Ophthalmology*
William G. Crane, MD - *Ophthalmology*
Mark Cox, MD - *Ophthalmology*
Caroline Ellis, MD - *Ophthalmology*
Dolph D. Haege, MD - *Pathology*
Douglas S. Helm, MD - *Anesthesiology*
Robert J. Holme, MD - *Ophthalmology*
Mark R. Jaffe, MD - *Ophthalmology*
Kameran Lashkari, MD - *Ophthalmology*
Pierre Mardelli, MD - *Ophthalmology*
Kimberly R. Martinez, MD - *Ophthalmology*
Nancy S. Melberg, MD - *Ophthalmology*
Jeffrey Minkovitz, MD - *Ophthalmology*
Abraham I. Poulose, MD - *Ophthalmology*
Rebecca Walker, MD - *Ophthalmology*
Tim Walline, MD - *Ophthalmology*

STUDENTS

University of Missouri-Kansas City

Nancy Baxi
Nora Gomez
Anthony T. Sonn

Washington University

Craig W. Carmichael
Michael Y. Park

University of Missouri-Columbia

Zbylut Twardowski, MD, PhD

Zbylut Twardowski, MD, PhD, professor of internal medicine, was awarded the American Kidney Fund's 1993 Torchbearer of the Year Award at the 13th Annual Conference on Peritoneal Dialysis in San Diego, California. The award recognizes the Dr. Twardowski's career accomplishments which include the introductions of several offshoots of peritoneal dialysis, such as high-volume, nightly and tidal dialysis. He also developed the widely used peritoneal equilibration test. Dr. Twardowski has been granted two U.S. patents for dialysis catheters, and another has been approved and will be issued soon. He has begun a clinical trial for one of the catheters, which exits the chest rather than the abdomen in order to reduce infection. Dr. Twardowski is also working on a new home hemodialysis unit that would be easy and relatively inexpensive for kidney patients to use.

Jerry C. Parker, PhD

Jerry C. Parker, PhD, clinical associate professor of internal medicine and chief of the psychology service at Truman Memorial Veterans' Hospital, has been appointed to a four-year term on the eighteen-member NIH's National Arthritis Advisory Board. The NAAB conducts second-line policy and program review of grants submitted to the National Institute of Arthritis, Musculoskeletal and Skin Diseases.

Ross Brownson, PhD, adjunct research assistant professor of internal medicine and director of the Missouri Department of Health's Division of Chronic Disease Prevention and Health Promotion, Michael C. Perry, MD, professor of internal medicine and Thomas Novotny, MD, formerly of the U.S. Centers for Disease Control and Prevention, have published a their study that links cigarette smoking to some forms of adult leukemia. Their meta-analysis of 15 previous studies concluded that smoking may boost the risk of leukemia by up to 30 percent and suggests that smoking may account for about 14 percent of all adult leukemia cases.

Thomas W. Burns, MD, professor emeritus and former director of the division of endocrinology diabetes and metabolism, has been appointed to mastership in the American College of Physicians. He will be inducted at the ACP's Annual Meeting in Washington, D.C.

Joseph Walls, MD, associate professor of surgery, was the lead author of a recent presentation at the European Association for Cardiothoracic Surgery meeting in Geneva Switzerland. He discussed "Growth and Functional Assessment of Autogenous Pulmonary Valves in Pigs Following Reimplantation.

St. Louis University

Thomas F. Frawley, MD

Thomas F. Frawley, MD, chairman of graduate medical education at St. John's Mercy Medical Center and emeritus professor of medicine at St. Louis University School of Medicine will be the 1993 recipient of the Alfred Stengel Memorial Award presented by the American College of Physicians. The award was established in 1947 and is given to a Master of the College who has exhibited "unusual loyalty and exceptional contributions to the aims and purposes of the College as well as outstanding influences in maintaining and advancing the best standards of medical education, medical practice and clinical research." Dr. Frawley served as president of the College from 1981 to 1982. He will receive the award at the College's Convocation March 31 in Washington, DC.

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MONETAMED PROFILE

THOMAS P. DOYLE, M.D.

HOME: St. Louis, Missouri

AGE: 36.

SPECIALTY: Orthopedic Surgery.

MEDICAL COLLEGE: University of Missouri, 1978

PRACTICE: "I recently purchased an established but declining sole practitioner office from a retiring physician. It's a risk, but they say that great deeds are usually wrought at great risk."

HOBBIES: Horseback riding and golf. "If I combined activities, would it be polo?"

LAST BOOK READ: Missouri: Images of Nature, photographed by Charles Gurche.

LATEST ACCOMPLISHMENT: "Testing a protective knee pad I'm developing for use by football players."

PROFILE: Independent and open-minded. "Living in the country, I don't feel hampered by social convention. I can work on new ways of doing things."

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Thomas P. Doyle, M.D. is a composite of numerous MonetaMed physician clients.

Continued from page 197

Ellen L. Garibaldi, MD, assistant professor of internal medicine in the division of allergy and immunology, has been awarded a one-year grant from Marion Merrell Dow to specifically study the feasibility of offering on-site smoking cessation programs in a medical subspecialty.

Mary F. Christiano Ruh, PhD, professor of pharmocological and physicological science, has been elected to a four-year term on the NIH, division of research grants advisory committee. The committee advises the division and the director of the NIH concerning matters of policy and practice as they relate to receipt, referral, assignment, and review of applications requesting support for biomedical and behavioral research and training.

David J. Schanzlin, MD, chairman of the department of ophthalmology and CEO of the Eye Institute, has received a grant from Research to Prevent Blindness (RPB) to support exploration into the causes, treatment and prevention of blinding diseases. The grant money will be used to construct research laboratories at The Eye Institute's new facility. The Institute will move this summer from its present location at 3655 Vista Ave. to a building at Grand Blvd. and Highway 44, formerly known as Missouri Pacific Hospital.

Peggy A. Szwabo, RN, LCSW, director of outpatient services and the geriatric psychiatry education center for the division of geriatric psychiatry and **George T. Grossberg, MD,** professor of psychiatry and human behavior and director of the division of geriatric psychiatry wrote and edited a book, *Problem Behaviors in Long-Term Care,* for professionals and laypeople to improve the quality of care for older adults.

Thomas C. Westfall, PhD, William Beaumont professor and chairman of the department of pharmacological and physiological science, has been awarded a four-year competitive renewal grant from the National Heart, Lung, and Blood Institute of the NIH, to continue his research on what causes high blood pressure. Dr. Westfall enters his 11th year of his second competitive renewal to specifically determine how the central nervous system regulates vascular smooth muscle.

Researchers are working with a new form of insulin that is designed to work faster than products currently available to people with diabetes. The new insulin is designed to act more quickly than the insulin products on the market that require injections at least 30 minutes to an hour before eating. An injection can be taken just five to ten minutes before a meal. The division of endocrinology is looking for people to participate in a study of the new insulin. Patients must be between the ages of 35 and 85 and must be getting ready to begin treatment with insulin or have been receiving insulin for less than two months. If interested, contact Stephanie Brusca, RN, at (314) 577-8458.

Research conducted in the division of geriatric medicine indicates that regular injections of the male hormone testosterone may increase the weight and muscle strength of older men. The researchers studied a group of 12 males over the age of 70. Half of the men were given regular injections of testosterone over a three-month period. They not only experienced weight gain and muscle strength, but their cholesterol levels dropped and their bones became stronger as well. Earlier studies have indicated that men with low levels of testosterone are six times as likely to break a hip when they fall than those with normal testosterone levels.

The division of infectious diseases and immunology is looking for two additional groups of volunteers in its largest research effort yet toward the discovery of an AIDS vaccine. In this expanded vaccine trial, volunteers from two population groups are being tested:

- Heterosexual young adults (18-22 years old) who have gone to a clinic for sexually transmitted diseases for treatment in the last three months or whose sexual practices may lead to contact with HIV.
- Active heterosexual or homosexual partners of persons with HIV infection.

Participants will receive one of two vaccines, or a placebo. More than 700 volunteers have participated in Phase I AIDS vaccine studies and more than 130 are from the St. Louis area. These two experimental vaccines, which are similar to the outer coat of HIV, have shown promise in the initial clinical trials conducted at SLU and the four other AIDS vaccine evaluation units in the United States. They are a step forward and need to be tested in larger studies to produce a vigorus immune response against HIV. If interested in helping with the research, contact the St. Louis University Vaccine Center at (314) 577-8649.

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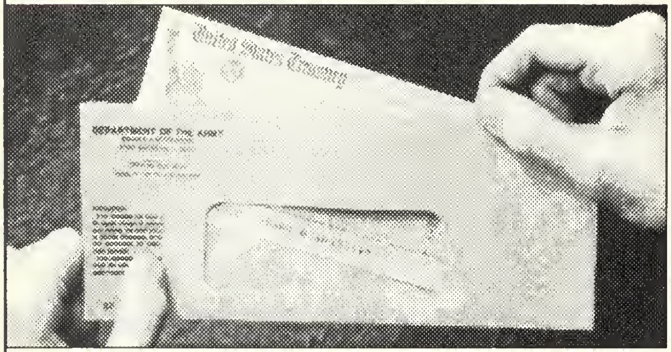

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Help for the Impaired Physician

Through its Physicians' Health Committee, MSMA helps doctors who are suffering from alcoholism, other drug addiction, psychiatric disorders, or other illnesses that may impair a physician's judgement and ability to render care.

The goal of the program is to help, not punish. The Committee is made up of physicians who have special expertise in treating the impaired professional. Effective treatment for these illnesses is achieved most easily when the disease is detected early. Family, friends, and associates are urged not to avoid the issue or give misguided sympathy that enables the condition to deteriorate.

Call the Physicians' Confidential 24-hour Line (314-995-4990). Only specially trained personnel will answer or return calls.

The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send CME information for listing in *MISSOURI MEDICINE*. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

April

Every week to Oct. 1, 1993. AIDS, Malpractice, OSHA and Medicare. 28 resort-based classrooms. Contact American Educational Institute, Inc., 401 S. Woodward, Suite 333, Birmingham, MI 48009, 800/354-3507, fax 313/433-0615.

2nd & 4th Tuesdays of April - *Kansas City*: 2nd Annual Perinatal-Neonatal Core Curriculum Workshops. 5 credit hours. Contact Carol Osborne, St. Luke's Hospital of K.C., 816/932-3737.

2 - *Springfield*: Decisions in Trauma: From Impact to Recovery. 6 credit hours. Call Cindy Burkey, 417/885-4092.

8 & 9 - *Norfolk, VA*: Hands-On Workshop on Advanced Diagnostic Methods in Andrology. Contact Eastern Virginia Med School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

12 - *St. Louis*: City-Wide Radiology Conference. Contact R. Gilbert Jost, M.D., Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

13 & 14 - *St. Louis*: Transesophageal Echocardiography Course. 13 credit hours. Contact Dianne Reid, St. Louis University, 314/577-8897.

16 - *Springfield*: Advanced Cardiac Life Support Recertification Course. 8 credit hours. Call Linda Climer, St. John's Regional Health Center, 417/885-2648.

19 to 23 - *St. Louis*: Medicolegal Death Investigator Training Course. 33 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

20 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, Bethesda Eye Institute, 314/577-8264.

22 & 23 - *St. Louis*: 25th Annual Matt Weis (OB/GYN) Symposium. 12 credit hours. Contact St. John's Mercy Medical Center, 314/569-6290.

23 - *Norfolk, VA*: Thrombolysis: It's Role in Peripheral, Arterial and Venous Disorders. Contact Eastern Virginia Med School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

22 to 25 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Advanced Microsurgery of the Lumbar and Cervical Spine. 24 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

24 - *St. Louis*: Hemodynamic Monitoring in Anesthesia and Intensive Care. 6.5 credit hours. Contact Office of CME, Washington University, Campus Box 8063, 660 S. Euclid, St. Louis, MO 63110, 314/362-6893 in MO, 800/325-9862 Interstate.

29 to May 2 - *Philadelphia, PA*: Clinical Electrocardiography: Basic Concepts & Interpretation, 13th Edition. Contact Eastern Virginia Med School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

29 & 30 - *Kansas City*: Ralph R. Coffey Surgical Symposium. 14 credit hours. Contact Carol Osborne, CME Office, Saint Luke's Hospital of Kansas City, 816/932-3737.

29 & 30 - *Kansas City*: Current Management in Critical Care. Contact Linda Smutz, Kansas City Southwest Clinical Society, 816/523-3383.

30 - *St. Louis*: Integrating Cancer Prevention and Early Detection into Primary Care. 6 credit hours. Contact St. John's Mercy Medical Center, 314/569-6290.

30 to May 1 - *St. Louis*: Hearing Aid Conference. Contact Office of CME, Washington University, 314/362-6893 in Missouri, 800/325-9862 Interstate.

30 to May 1 - *St. Louis*: Modulation of Cytokine Toxicity. Contact St. Louis University, CME Office, 314/577-8167 or 800/553-2712.

30 to May 2 - *Arlington, VA*: Pathology of HIV. Contact Daniel E. Reichard, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

May

1 - *St. Louis*: 4th Annual Conference on the Management of Colon and Rectal Disease. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

5 - *St. Louis*: Update in Thoracic Surgery. Contact Washington University, CME, Campus Box 8063, 660 S. Euclid, St. Louis, MO 63110-1093, 314/362-6893 in MO, 800/325-9862 Interstate.

5 - *St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Recertification Course. 7 credit hours. Contact Mary Beth Foerstel, St. Louis University, 314/577-5385.

6 to 8 - *St. Louis*: WUMCAA Reunion. Contact Washington University, Campus Box 8063, 660 S. Euclid, St. Louis, MO 63110-1093, 314/362-6893 in MO, 800/325-9862 Interstate.

6 to 9 - *St. Petersburg, FL*: Diagnosis and Treatment of Physician's Liability Issues. 11 credit hours. Contact St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

6 to 9 - *Pentagon City, VA*: Practical Dermatology for the Primary Care Physician, 19th Edition. Contact Eastern Virginia Med School, CME, POB 1980, Norfolk, VA 23501, 804/446-6140.

7 - *Springfield*: ACLS Recertification Course. 8 credit hours. Call Donna Willoughby, Cox South, 417/885-4117.

7 - *St. Louis*: Toxicology Symposium - Cardinal Glennon Children's Hospital Regional Poison Center. 5 credit hours. Contact Robert W. Jaeger, 314/772-8300.

7 & 8 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Approaches to Cranio-Cervical Fixation. Contact St. Louis University, CME, 314/577-8167 or 800/553-2712.

8 - *St. Louis*: Current Gidelines for Office Management of Patients with Cardiovascular Disease. Contact St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

10 - *St. Louis*: MR Imaging of the Pelvis. City-Wide Radiology Conference by Jeffrey Weinreb, MD. Contact R. Gilbert Jost, M.D., Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

11 to 13 - *St. Louis*: Doppler Echocardiography Course. 20 credit hours. Contact Dianne Reid, St. Louis University, 314/577-8897.

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13 - *St. Louis*: Current Perspectives in Menopausal Problems. Contact Washington University, 314/362-6893 in Missouri, 800/325-9862 Interstate.

13 to 16 - *Washington, DC*: Central Atlantic Seminar in Anesthesiology. Contact John F. Vargo, George Washington University, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

14 - *Kansas City*: Practical Cardiology. 5.5 credit hours. Contact The Ed Bixby Institute, 2316 E. Meyer Blvd., Kansas City, MO 64132, 816/276-4306, 800/892-5771, ext. 4306 in MO, 800/821-5140, ext 4306, bordering states.

14 & 16 - *St. Louis*: Computer Multimedia Applications for Medical Practice. 21 credit hours. Contact St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

17 to 22 - *St. Louis*: Health Care Ethics in a Pluralistic Society. 43 credit hours. Contact Donna Troy, St. Louis University, 314/577-8195.

19 & 20 - *St. Louis*: Focus on Surgery in Pediatrics. 8 credit hours. Contact Judith L. O'Guin, St. John's Mercy Medical Center, 314/569-6290.

20 to 22 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Temporal Bone Surgical Dissection - Exploring New Surgical Instrumentation with Midas Rex Hands-On Workshop. 16 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

22 - *St. Louis*: Midwest Cardiology Debates. 6 credit hrs. Contact St. Louis University, CME , 314/577-8167 or 800/553-2712.

23 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprhensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

26 - *St. Louis*: Neonatal Pharmacology. 6.25 credit hours. Contact Patricia Nash, St. Louis University, 314/577-5631.

June

3 & 4 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Advanced Applications in Endoscopic Neurosurgery. 14 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

6 to 11 - *Virginia Beach, VA*: Ninth Annual EVMS Family Medicine Review Course. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

7 to 9 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part I: Peripheral Nerve. 22 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

8 & 9 - *St. Louis*: Transesophageal Echocardiography Course. 13 credit hrs. Contact Dianne Reid, St. Louis University, 314/577-8897.

10 to 12 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part II: Spine-Microsurgery & Stabilization. 24 credit hours. Contact the St. Louis University, CME, 314/577-8167 or 800/553-2712.

11 & 12 - *Columbia*: Primary Pediatrics. Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

11 & 12 - *St. Louis*: Alzheimer's Disease. Contact Washington University, Campus Box 8063, 660 S. Euclid, St. Louis, MO 63110, 314/362-6893 in Missouri, 800/325-9862 Interstate.

12 - *St. Louis*: Treating Ischemic Stroke. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

12 to 16 - *Arlington, VA*: Board Review in Family Practice. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

14 - *Springfield*: PALS Recertification Course. 7.5 credit hours. Call Cox South, 417/885-6111.

14 to 19 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part III: Microsurgery of the Brain. 36 credit hours. Contact the St. Louis University, CME, 14/577-8167 or 800/553-2712.

17 & 18 - *St. Louis*: Allergic Diseases of the Upper & Lower Airways. Contact Office of CME, Washington University, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

17 to 20 - *Tan-Tar-A, Lake of the Ozarks*: MAFP 45th Annual Meeting. Over 20 possible CME hours offered. Contact MAFP, 816/747-5114.

20 to 24 - *Columbia*: 15th Annual International Society of Heart Research. Contact Barry Kling, University of Missouri-Columbia, CME Office, 314/882-4105.

24 to 26 - *St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Provider Course. 20 credit hours. Contact Mary Beth Foerstel, St. Louis University, CME Office, 314/577-5385.

25 to 27 - *Williamsburg, VA*: Eleventh Summer Symposium in Internal Medicine. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

27 & 28 - *St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course. 16 credit hours. Contact the St. Louis University - CME Office, 314/577-8167 or 800/553-2712.

July

6 to 10 - *Virginia Beach, VA*: Sixteenth Annual Flap Dissection Workshop. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

9 & 10 - *St. Louis*: Advanced Trauma Life Support Course. 16 credit hours. Contact Mary Keegan, R.N., St. Louis University School of Medicine, 577-8365.

9 to 11 - *Springfield*: ACLS Provider Course. 18 credit hours. Call Donna Willoughby, Cox South, 417-885-4117.

10 & 11 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic. 7 credity hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

21 to 25 - *Houston, TX*: 15th National Lesbian and Gay Health Conference and 11th Annual AIDS/HIV Forum. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

26 to 29 - *St. Louis*: Advanced Death Investigation Conference. 19.5 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

31 to August 1 - *St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course. 16 credit hours. Contact the St. Louis University, CME, 314/577-8167 or 800/553-2712.

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Executive Director position in Jefferson City, Missouri, for the Board which regulates the practice of physicians, physical therapists, physician assistants, speech pathologists, clinical audiologists, and athletic trainers. The executive director provides senior staff support to the Board and its committees, directs a clerical and professional staff of 46, and administers a budget of 1.8 million dollars. The executive director acts as the Board's liaison with the legislature, the public, physicians, and professional groups and the media on matters concerning the Board. Substantial travel required. Candidates should posses the following qualifications: Minimum education of a bachelor's degree; Management experience; Fiscal and budget experience; Strong interpersonal skills; Excellent communication and writing skills; Personnel management skills; Strong analytical skills and research abilities. Knowledge or experience with the governmental regulatory process, the process of health care delivery, or the health care industry helpful. Salary negotiable based on qualifications and experience. Salary range $35,589.00 - $49,032.00. (EOE M/F/D/V) Send resume by May 1, 1993 to: State Board of Registration for the Healing Arts, P.O. Box 104951, Jefferson City, MO 65110

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In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: **"In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA."** We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

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References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

Illustrations

Illustrations should be glossy prints or drawings in India ink on white paper. They should not be mounted and name of author and figure number should be penciled lightly on the back. Legends should appear on a separate sheet. Printing illustrations in one color (black) is standard. Color may be requested with additional cost being the responsibility of the author.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing. Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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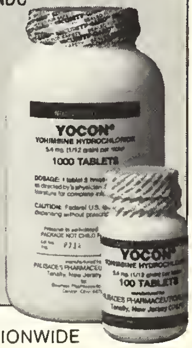

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Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

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Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SO 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SO 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed

Cimetidine. The AUC_{0-12hr} for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SO 31,906 and SO 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SO 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended

In interaction studies with *aspirin, antacids* [1 hour prior to PRAVACHOL (pravastatin sodium)], *cimetidine, nicotinic acid,* or *probucol,* no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p<0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p<0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p<0.05$). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells; a chromosomal aberration test in hamster cells, and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area ($mg/meter^2$). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS. **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated, adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal myopathy, rhabdomyolysis.

Neurological dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting

Reproductive gynecomastia, loss of libido, erectile dysfunction

Eye: progression of cataracts (lens opacities), ophthalmoplegia

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions**.)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

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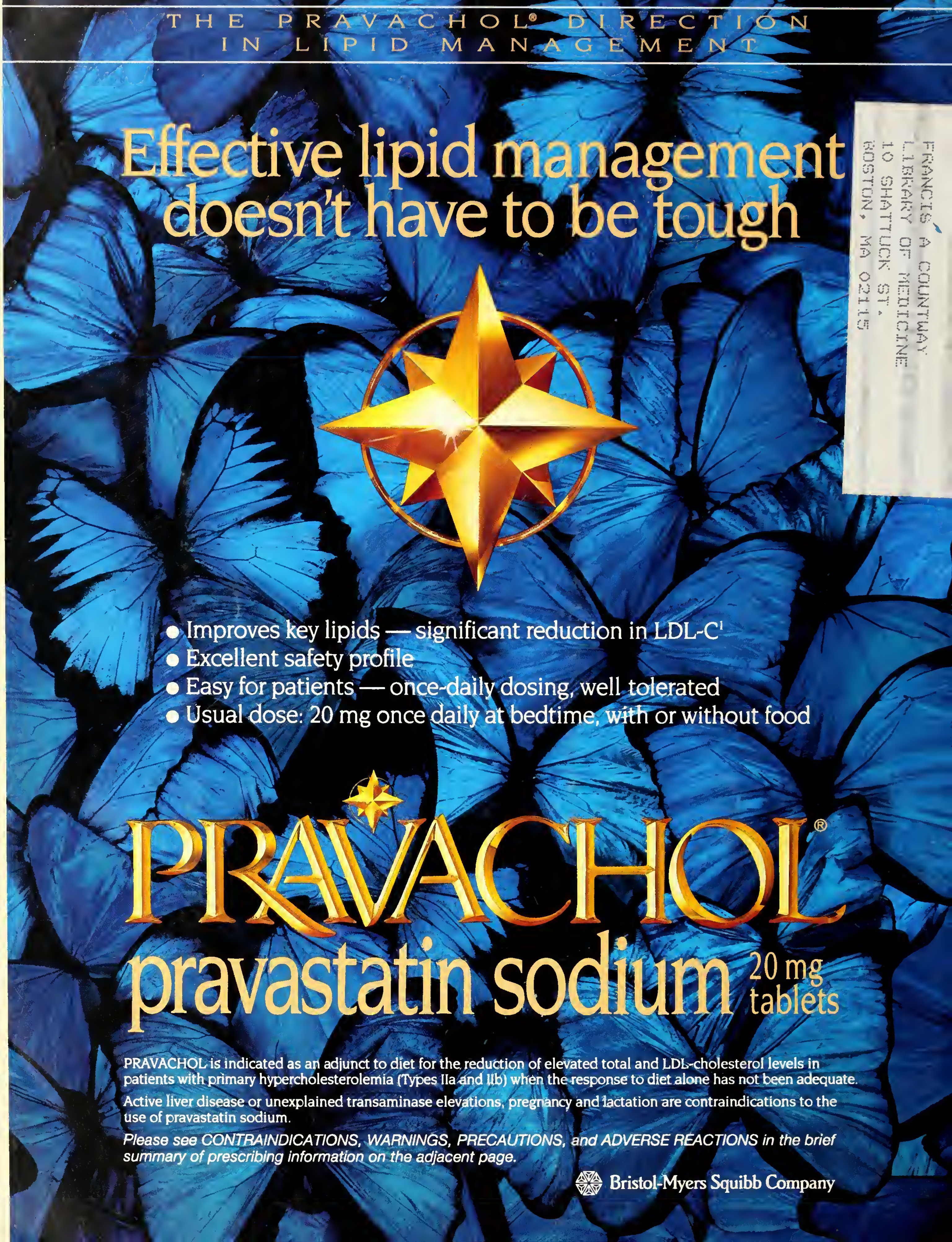

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Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.

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- ☐ Medical School Applicant Pool: On the Rise
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Donald G. Sessions, MD
Wilfred E. Wooldridge, MD

MISSOURI STATE MEDICAL ASSOCIATION
Box 1028
113 Madison Street
Jefferson City, Missouri 65102
Phone: 314/636-5151
Fax: 314/636-8552
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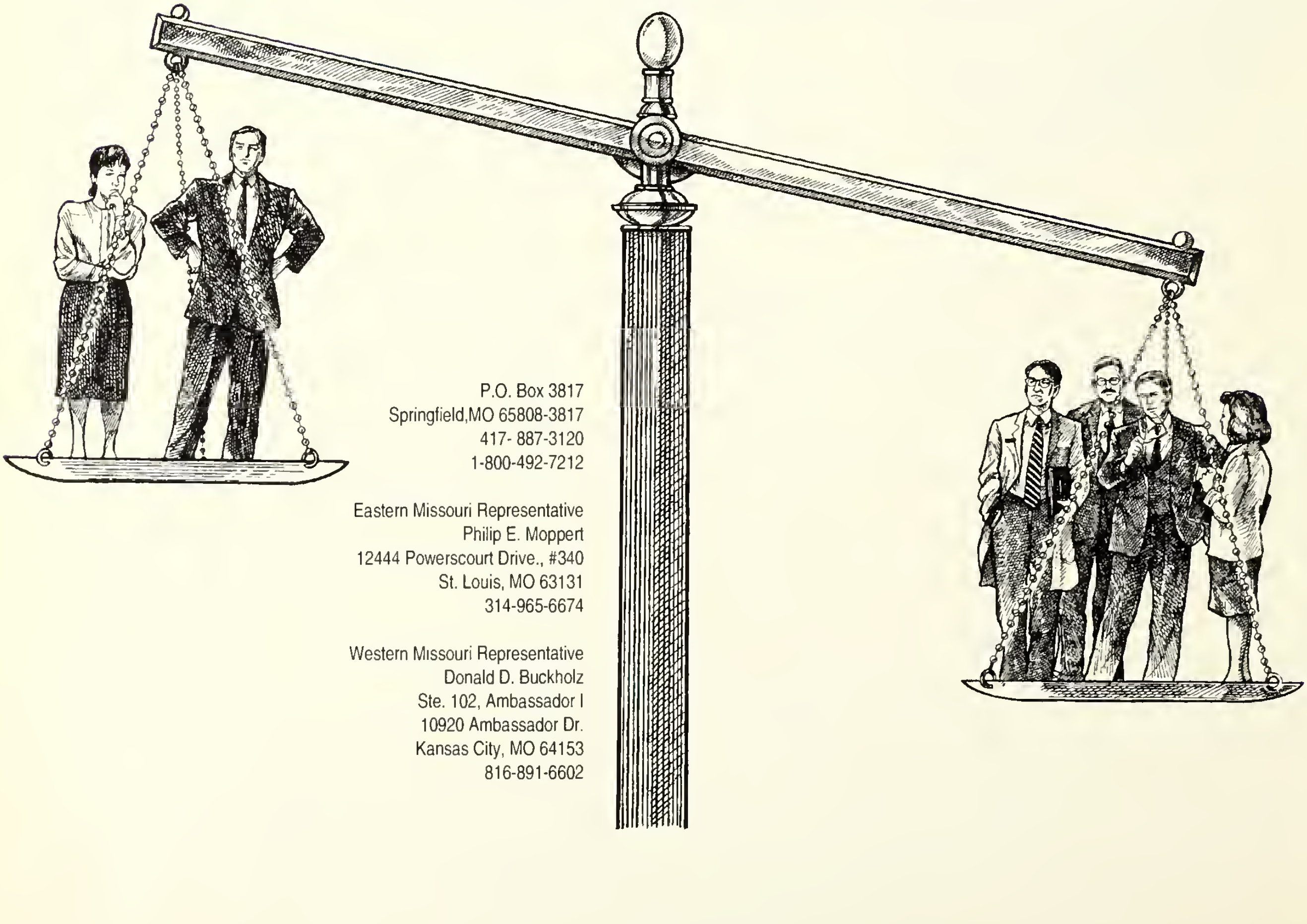

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MAY COVER:

Begonias

24" x 30" watercolor by Zelda Glazer

Glazer, a professional artist with over twenty years experience, resides in Chesterfield and operates *Art Expressions*, a graphic arts studio. While visiting friends in Lampe, a blooming begonia caught her artist's eye and her colorful rendition reminds us that the Spring season is underway in Missouri and that Summer is just around the corner.

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Anticipation of Change

J. Regan Thomas, MD, Editor

I wrote previously in this column that an initial step in redeveloping and redesigning the present health care delivery system should include medical liability reform. I was pleased to find that apparently our readership includes a number of our colleagues in the legal profession. Several of them wrote implying that medical liability had very little to do with the cost of health care in this country. One concerned attorney stated that "defensive medicine" as I used the phrase was a myth in terms of significant effects on rising health care costs. It's always a pleasure to have feedback from our readers and I'm always open to opinions from a different perspective. I'll stand by my own opinion on this one however... medical liability tort reform should play a role in a realistic plan for controlling health care costs.

Hillary Rodham Clinton and her advisory group have a complex task before them. If they expect to complete the task within the days which remain on their time table, they must recognize some other elements as well. They must realize that the anticipation of change is a significant hurdle, and by realizing this difficulty, develop a program that adequately communicates how proposed changes benefit affected individuals.

It's not surprising that many plaintiff attorneys resist changing a legal system for medical liability that is tremendously rewarding to them. Physicians and health care providers are hesitant to abandon a private fee for service system that has served them through the years and gave them greater control of their practices and livelihood. Americans are reluctant to give up the freedom to choose their own physician. When they need it, when they are sick, they also tend to demand every test, treatment, and procedure that has a remote chance of curing them. Everyone agrees on the wisdom and the necessity of reducing costs. The anticipation of changing elements which may be of benefit to that particular individual is the tough part.

It's easy for ideas to be tossed about suggesting possible improvements. Most would agree, for example, that a plan to simplify administration of health care would be beneficial. Presently, the enormous burden of paper work afflicts hospitals, patients and physicians. Anthony Lewis, a columnist for the *New York Times* News Service recently reported the "administrative costs" alone in administering the health care system amount to $70 billion a year. Fine, but then deciding the best way to avoid this immense tangle of administrative costs presents the challenge. Any suggestion tends to be a catalyst for concern to some members of the system.

HRC has a genuine conundrum facing her. Real innovation will be required. Simply applying a new cost ceiling or altering payment schemes and equations will not succeed. Innovative approaches that give tangible advantages to the nation will be required to overcome negative responses to the anticipation of change.

Melvin C. Kasten, MD

Missouri State Medical Association
President
1993 - 1994

Dr. Kasten is a general surgeon from Cape Girardeau. He is a graduate of the University of Missouri-Columbia School of Medicine (BS Medicine 1949) and received his MD degree from the University of Pittsburgh, Pittsburgh, Pa., in 1951.

He served an internship at Columbia Hospital, Pittsburgh, from 1951 to 1952, and then completed a residency at St. Louis County Hospital, St. Louis, in 1955. He has had a private practice in Cape Girardeau ever since.

In 1980, Dr. Kasten was elected Vice Councilor to the Missouri State Medical Association from his home district in Southeast Missouri. He became the district's Councilor in 1983. In 1991, Dr. Kasten was elected Chairman of the Council, and in April 1992, he won election to the office of President-Elect.

In addition to his membership in the Missouri State Medical Association, Dr. Kasten is active in the American Medical Association. He has served as alternate delegate or delegate from Missouri since 1972. He served the Missouri delegation as chairman from 1982 to 1986.

He is a Fellow of the American College of Surgeons (since 1967) and a member of the American Society of Law and Medicine. He is also a past president of the Missouri State Surgical Society and the Cape County Medical Society (1972).

He served as a member of the Missouri State Board of Registration for the Healing Arts (an appointed position) in 1967, 1968, 1972, and 1976. He was President of the Board in 1968.

His wife, the Hon. Mary C. Kasten (R-Cape Girardeau) has been a member of the Missouri House of Representatives since 1982.

They have three grown children, Mark - a family physician and MSMA 10th District Vice-Councilor, Michael, and Margaret.

Dear Dr. Woerth,

I am a surgeon and have noticed on our Medicare Explanation of Benefits that frequently the consultation or hospital visit I do to determine the type of surgery needed is being denied. How can my staff prevent this from happening?

Dr. B. M.

Dear Dr. B. M.,

Medicare has established a new modifier to be used with evaluation and management services performed the day before or the day of major surgery. The modifier is QI. Use of this modifier allows for reimbursement of a consultation, office visit, or subsequent hospital visit provided on or the day before major surgery. Presently, global surgery edits will deny these evaluation and management services because the computer assumes they are part of the pre-operative services included in the global surgery fee.

The modifier QI should only be used with evaluation and management codes (those codes that begin with "99") and only for the initial decision to determine that surgery is needed on the day of the surgery or the day prior to the surgery.

Dear Dr. Woerth,

With RBRVS and all the discounts that HMO's and PPO's are requesting, it is getting more and more difficult to maintain enough cash-flow to pay my overhead expenses. Have you any suggestions?

Dr. J. F.

Dear Dr. J. F.,

This is a common problem I hear from physicians and there is something you can do. You need to encourage your patients to pay for their services when they are rendered. This is most difficult for surgery specialties but even they can collect more at time of service. The major stumbling block to increasing collections in the office is not the patients. The majority of patients will pay if asked. I find that it is the staff who are not asking for payment that are most often responsible for cash-flow problems.

Your staff needs to be informed (and supported) when they try to collect at time of service. In other words, the rules apply to all patients with few exceptions and those should be decided by the doctor. If you have a practice brochure, include a paragraph about your collection policy so that patients know they are expected to pay at time of services. This can also be told to all patient making appointments.

For patients enrolled in HMO's and PPO's that have a copayment (generally $10), this should be collected before the patient sees the physician. Those patients having insurance that requires a percentage copayment by the patient (generally 20%), collect this at time of service.

There will be those patients who forget to bring their wallet, checkbook, or credit card to the office. I suggest these people be given an addressed envelop with the amount owed written on the inside flap and asked to mail-in their check as soon as they get home.

There is always a concern by physicians that collections in the office is not perceived as overly aggressive. I share this concern. However, my clients who have politely asked for payment at time of service have seen dramatic increases in their collections in the office. As an example, one of my clients started in January asking for payment at time of service. Their collections in the office increase 400% and the amount of patients mailing-in payments with the envelop received at the visit increased the monthly collections another 26%. With all this increase in cash-flow there was not one patient complaint!

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, PhD
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Although your name will not be used in *Missouri Medicine*, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

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Dear Editor:

Doctors Young and Nemecek wrote an excellent review of the indications for prophylactic mastectomy. In my opinion, one significant indication was omitted. That indication is for treatment of the opposite breast once a mammographically negative malignancy is removed.

In those individuals where a breast cancer was clinically discovered but mammographically negative, especially when there is a positive family history for breast cancer, I think that this patient will benefit from a prophylactic mastectomy. In my opinion, a simple mastectomy is the best prophylaxis. Such a patient should confer with her general surgeon, plastic surgeon, and oncologist before making such a decision.

Sincerely,
Charles D. Ettelson, MD

Dear Mr. Cooper,

I have enclosed the card indicating that my wife and I will not be able to attend the MSMA Presidential Installation and program honoring those of us who have been physicians for fifty years.

I much appreciate the fact that this recognition is being given to those of us who have been fortunate enough to practice this long. I am still able to practice and enjoy feeling useful as a third generation of doctors serving the north St. Louis Metropolitan area; and am proud of my wife and myself for having helped a son to become a well-trained radiologist, practicing in Oshkosh, Wisconsin.

My best wishes to the MSMA. May the many challenges facing medicine today not change the traditional "Spirit of Medicine" into the "Business of Medicine."

Best Regards,
G. Russell Aufderheide, MD

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Dermatology Quiz #4

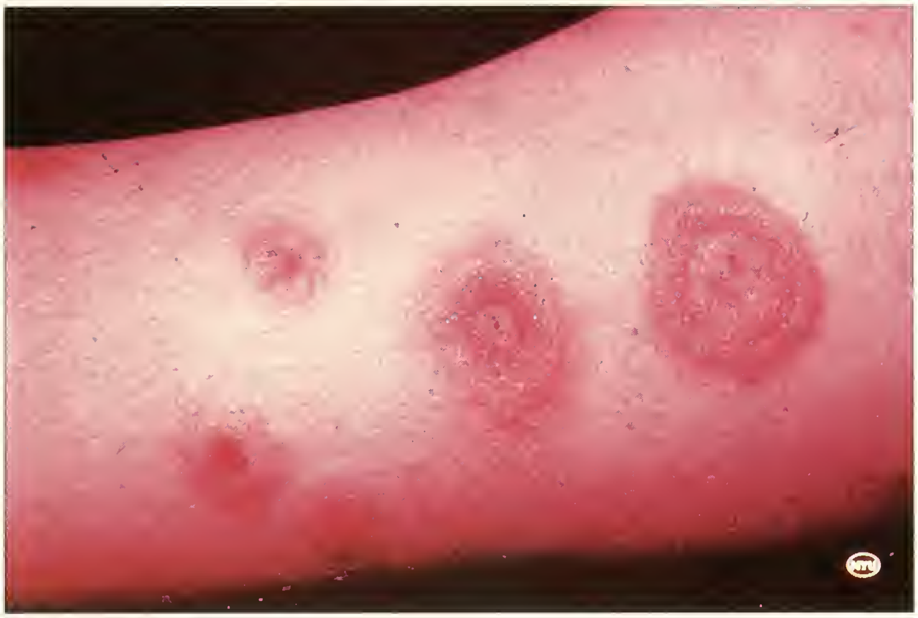

Figure 1

The lesions seen in Figure 1 developed on the arm of 20-year-old man one day prior to evaluation. Similar lesions were present on his lower legs. He had been feeling well except for having had a “cold sore” on his lower lip approximately 10 days prior to the onset of the rash.

His physical examination and review of systems were otherwise unremarkable. He had no other known medical problems and was taking no medications.

The most likely diagnosis is:

a) Disseminated herpes infection
b) Erythema multiforme
c) Gonococcemia
d) Secondary syphilis
e) Hand-foot-and-mouth disease

(*See Answer on next page*)

Submitted by **Rachel L. Dotson**, MD, and **Susan Zurowski**, MD, University of Missouri, Division of Dermatology.
The Dermatology Quiz is coordinated by **Kent D. Walker**,MD, University of Missouri Hospital & Clinics, Department of Dermatology, One Hospital Drive, M173, Columbia, Missouri 65212.

The Dermatology Quiz is funded in part by Owen/Galderma Laboratories Inc.

(Dermatology Quiz Question is on previous page.)

Answer: b) Erythema multiforme

Erythema multiforme (EM) is an acute, self-limited, usually benign eruption of the skin and mucous membranes. The eruption is usually characterized by the distinctive target or iris lesion (Figure 1).

Most cases of EM occur in young adults, from the second to the third decades of life. Slightly more males than females are affected. Recurrences of EM are common (22 to 37% of cases, or more, are recurrent). About one third of patients have prodromal symptoms such as malaise, fever, headache, and upper respiratory tract signs. Prodromal symptoms seem to be more prominent in the major form of EM.

Although the clinical appearance is variable, the rash is usually monomorphous in a given patient. The characteristic lesion begins as a round, erythematous macule that rapidly becomes papular. The center clears, becoming cyanotic, while the periphery remains erythematous. These concentric color changes produce the characteristic target or iris lesion. The center frequently becomes bullous or develops epidermal necrosis. Target lesions are usually found in a symmetrical, acral distribution on extensor surfaces and often palms and soles. Truncal lesions may occur but are less numerous than extremity lesions. Other lesions that may be found include urticarial plaques, vesicles, and bullae.

The pathogenesis is not fully understood, although evidence suggests that EM represents an hypersensitivity reaction. A wide range of factors have been reported to trigger EM, however in only a few instances is there convincing evidence for a direct link (Table 1). The most thoroughly documented of the triggering factors are viral infections, especially herpes simplex, and Mycoplasma infections. Although drugs are frequently blamed for cases of EM, this may be coincidental, as they are often administered for prodromal symptoms of viral diseases. However, there is a well documented association between certain drugs (sulfonamides and anticonvulsants) and EM. In approximately 50 percent of the cases no known triggering factor can be found.

Erythema multiforme minor is the term applied to the common, mild form with the above described lesions. The course of EM minor is usually that of successive crops of lesions which persist for one to two weeks before receding. The total course rarely exceeds four weeks.

The more severe variant is termed EM major or the Stevens-Johnson syndrome. EM major usually consists of a prodrome, followed by the sudden onset of skin and mucous membrane lesions. Constitutional symptoms are common including fever, weakness, and prostration. Mucous membrane involvement is severe and most commonly consists of confluent erosions of oral mucosa, lips, and bulbar conjunctiva. In some cases there may be involvement of external nares, respiratory tract mucosa, pharynx, esophagus, and genital mucous membranes. The skin lesions in EM major consist of those seen in the minor form plus large areas of confluent erythema, large bullae, and denudation of epidermis. The course of EM major is more prolonged, lasting about six weeks.

EM minor is a relatively benign, self-limited illness with no significant complications. However, EM major quite commonly leads to serious complications. These patients are often acutely ill, requiring hospitalization for supportive care with attention to fluid and electrolyte status. Prevention and treatment of secondary infection is also important. The mortality rate of untreated EM major is approximately 5 to 15 percent. However, if skin involvement is more widespread (approaching that of toxic epidermal necrolysis) then the mortality may be as high as 25 to 50%. The treatment of EM with systemic corticosteroids is controversial.

This case represents EM associated with herpes simplex virus infection. The proportion of EM cases that are herpes-associated has been reported to range from 15 to 63%. EM typically follows a herpes simplex infection by one to three weeks. Cases of EM associated with herpes simplex virus (HSV) are usually of the minor variant and are frequently recurrent. Both HSV type 1 and HSV type 2 may trigger EM. Conservative, symptomatic treatment would be most appropriate for this patient. However, recurrent debilitating episodes of EM associated with HSV may necessitate the use of oral Acyclovir.

Table I

Well-documented precipitating factors in EM

- Viral infections (especially herpes simplex & EBV)
- Mycoplasma infections
- Bacterial infections (TB, Tularemia, Yersinia)
- Fungal infections (Histoplasmosis)
- X-ray therapy
- Drugs (especially sulfonamides & anticonvulsants)

General references:

1. Elias PM, Fritsch PO: Erythema Multiforme, in *Dermatology In General Medicine*, 3rd ed, edited by Fitzpatrick TB et al. New York, McGraw-Hill, 1987, pp. 555-563.

2. Huff JC, et. al: Erythema Multiforme: A critical review of characteristics, diagnostic criteria, and causes. *J Am Acad Dermatol* 1983;8:763-775.

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Alternative Methods of Stress Management

John C. Hagan III, MD, North Kansas City
(with suggestions from Edgar M. King, Jr., Ophthalmic Assistant)

Stress getting you down? Are you refractory to psychoanalysis, major tranquilizers and group therapy? Perhaps these alternative stress management techniques may help. On the other hand, it may just demonstrate how weird things get when an Ophthalmologist practices Psychiatry.

1.
Stare at people through a fork and pretend they're in jail.
2.
Write a short story using alphabet soup.
3.
Use your Mastercard to pay your Visa bill.
4.
The next time someone says, "have a nice day," tell them you have other plans.
5.
Drive to work in reverse gear.
6.
Read the *Physicians' Desk Reference* upside down and look for hidden messages.
7.
Make a list of "things to do;" include only things you've already done.
8.
Dance naked in front of your pets.
9.
Fill out your income tax return using only Roman numerals.
10.
Pay your attorney's bill with beaver pelts.
11.
Ask people directions in a language you've made up.
12.
Find out what a frog in a blender really looks like.
13.
Put your small children's clothes on backwards and send them off to school as if nothing was wrong.
14.
Start a nasty rumor and see if you recognize it when it gets back to you again.
15.
Lie on your back eating celery; using your navel as a salt dipper.
16.
Tattoo "out to lunch" on your forehead.
17.
Collect lawyer jokes.
18.
Next time you hear, "my child is going to law school," smile and say, "who isn't these days?"

- Elizabeth Huffaker - A Woman For All Seasons

William H. Huffaker, MD

Elizabeth Huffaker

How do you condense into one article almost 28 years of knowledge about a special lady? Elizabeth has always been an achiever. In high school she was active on the student council, selected to represent her school at Girls' State, and during her senior year was Queen of Courts. She received a bachelors degree in Business Administration in 1967 from Washburn University, where she was a member of Alpha Phi Sorority.

It was during this time in July 1965, that we met. She encouraged and helped me with my medical school applications. After a great but awkward two years of dating by commuting between schools, we married in June 1967, following her graduation. We then moved to Kansas City into our first apartment so that I could begin my second year of medical school.

Elizabeth secured a position with Southwestern Bell at the managerial level as an accounting supervisor (at considerably less pay than her male counterparts). She soon realized that she and her idealism were not made for the business world. Truth had validity only if it did not offend your immediate supervisor.

After surviving the financial and educational rigors of medical school, we moved to Birmingham, Alabama for my internship at the University Hospital. This was quite an eye-opening experience. The time was 1970, immediately following George Wallace as Governor. After deciding that Alabama was not the place where we wanted to establish roots, we moved to Charlottesville, Virginia, to start my surgical residency.

Elizabeth, not happy with her business career, decided to re-enter school for a degree in nursing. She was accepted at the University of Virginia School of Nursing. The tables were now turned. She had put me through medical school; now I would put her through nursing school.

Unfortunately, the Vietnam Conflict entered the picture. Both of us had to interrupt our educations so that I could "volunteer" to serve in the Army. In 1972, we moved to Ft. Bragg, North Carolina, where we lived for two years. Admittedly, it was a good break from residency. For the first time since being married, we could live like normal human beings. It was in Fayetteville, North Carolina, in 1973 that Elizabeth gave birth to our first child, Stephanie.

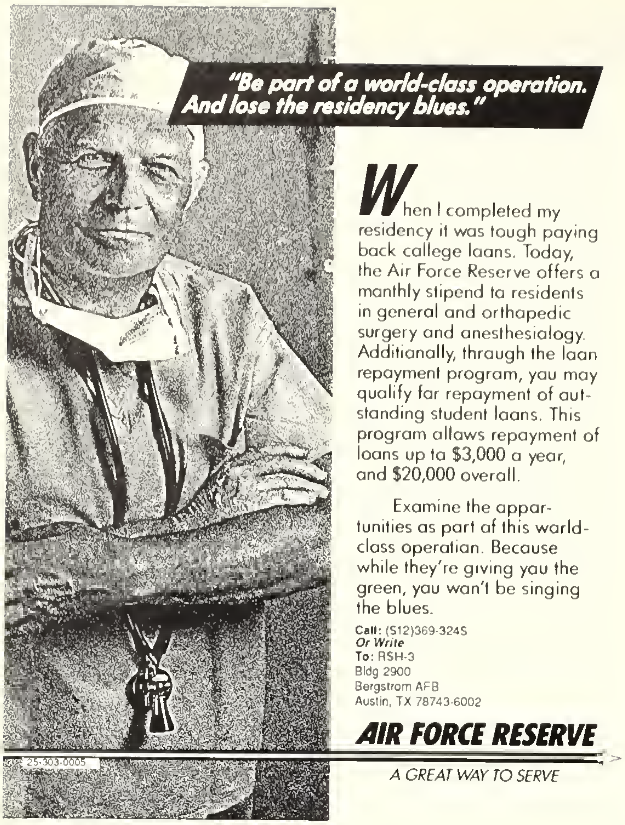
In 1974, we moved back to Charlottesville for one year during which Elizabeth completed her bachelor degree in nursing. Immediately after her graduation our second child, Jennifer was born. The next day after bringing Jennifer home from the hospital we had to move to Roanoke, Virginia for a year before moving on to St. Louis to start my residency in plastic surgery. We loved Virginia and fully intended to move back there after the completion of my residency at Barnes.

Elizabeth is an avid sports fan. In fact, before we even had a house to live in, we ordered our season tickets to the then "Cardiac Cardinals." Our third child, William, was born on December 10, 1979, one day after the last home game of the Cardinals (which Elizabeth attended).

Coming to St. Louis changed our lives completely. Elizabeth worked as a nurse at Barnes on the Ob-Gyn Oncology Division. For the first time in years we were able to live in one place long enough to set down some roots. We fell in love with St. Louis and decided to stay. After finishing my residency in 1978, I joined Plastic Surgery Consultants, Ltd., to begin private practice.

At the urging of George Bohigian, MD, I became active in the Medical Society and Elizabeth became active in the Medical Auxiliary. I could see a big change starting in Elizabeth. Even though she had been an achiever in her early years, our frequent moves and the responsibilities of motherhood had kept these desires suppressed. She rather

Continued on page 226



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Continued from page 225

timidly accepted the position as treasurer of the St. Louis Medical Society Auxiliary. Her confidence in herself began to grow and within a short time she became president of the St. Louis Metropolitan Medical Auxiliary from 1987 to 1989.

She has held numerous positions within the Missouri State Medical Association Auxiliary, including recording secretary, corresponding secretary, treasurer, membership chairman, and health projects chairman. None of these positions has been more rewarding than this past year as president-elect. With Marge Perkins (also from St. Louis) as president, she and Elizabeth explored almost every section of this state and have met so many great Auxilians. They have loved every minute of it.

Elizabeth has a passion for writing. It started in high school when she was invited to become a member of the Quill and Scroll Society. In 1990 and 1992 she received the Jean E. Duensing Journalism Award from the MSMAA in recognition for articles written concerning the Auxiliary. She is eager to continue her penmanship this next year.

I know that this next year will be an outstanding one for Elizabeth. She has looked forward to this time with both apprehension and excitement. She has always risen to all challenges presented her. She truly is a woman for all seasons.

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PREVENTION AND CONTROL OF MELANOMA SKIN CANCER IN MISSOURI

James R. Davis, PhD; Jian C. Chang, PhD; Ross C. Brownson, PhD; Bruce B. Gibson, BS

Melanoma skin cancer is currently the eighth most prevalent cancer in the United States.[1] The most common forms are lentigo maligna melanoma, superficial spreading melanoma and nodular melanoma.[2] Lentigo maligna melanoma occurs among older persons with sun damaged skin. The latter two cancers usually occur in relatively younger individuals on portions of the body that are not normally exposed to the sun. Acral lentiginous melanoma generally occurs on the palms, soles of the feet, or the squamous mucosa.

Melanoma skin cancer incidence rates vary substantially around the world from a low of 0.2 per year per 100,000 population in parts of Japan to a high of 40.0 per year per 100,000 population in Queensland, Australia.[3]

Melanoma incidence rates have been increasing dramatically in the United States and many other parts of world during past 40 years.[2] The highest rates of increase have been among Caucasians living in Hawaii.[3] Incidence rates in Hawaii have increased among females (9.8% per year) as well as males (9.4% per year).

With the exception of Europe, incidence rates increase as one moves closer to the equator.[2,4] The highest risk for melanoma skin cancer occurs among fair skinned people living in temperate and tropical latitudes.[2] Among individuals migrating to Australia, those arriving before the age of 15 were more likely to develop melanoma cancer.[5] Melanoma is very rare in Blacks and Asians.[2]

Melanoma skin cancer is significantly more common among high socioeconomic populations.[2] Several investigators[6,7] found significantly higher rates among professional, technical, administrative, and managerial workers, and significantly lower rates among laborers, and workers in production and transport. Other studies have found that outdoor workers have an overall lower risk of melanoma skin cancer than indoor workers.[2] In contrast to these findings, Armstrong[3] found a higher risk of melanoma on parts of the body normally exposed to the sun for individuals in occupations with higher sun exposure.

A comprehensive theory has been advanced to explain the relative risks observed for various groups.[3] Sun exposure (ultraviolet radiation) is believed to be the major risk factor for melanoma skin cancer. However, genetic susceptibility to sun related damage is also thought to be a contributing risk factor.

Lower incidence rates for outdoor occupations are attributed to a possible protective effect of regular sun exposure. Higher incidence rates for indoor occupations are associated with the potential for intermittent and severe exposures. This explanation is supported by studies that show significant relationships between melanoma rates and the number of sunny vacations and the number of severe sun burns.[8,9]

The increasing trend in melanoma skin cancer incidence is attributed to life style changes such as more frequent sunny vacations, increased outdoor recreational activities, and modifications in clothing.[10]

This study presents time trends in melanoma skin cancer mortality for Missouri residents and projects rates for the year 2000. It also examines demographic and geographic factors associated with increased risk in Missouri. Prevention and screening methods are discussed and opportunities for physician action are identified.

METHODS

Mortality Analysis. Data from the Missouri Center for Health Statistics[11] were used to assess the trend in melanoma skin cancer mortality from 1980 to 1990. Linear regression was used to determine the trend and to project mortality rates for the year 2000.

Demographic and Geographic Analyses. Information from the Missouri Cancer Registry (MCR) was used to characterize melanoma skin cancer cases in the state and to identify geographic areas with higher or lower than expected incidence rates. MCR has been collecting data from public and private hospitals in Missouri since 1972. Reporting was mandated by law in 1984. MCR is

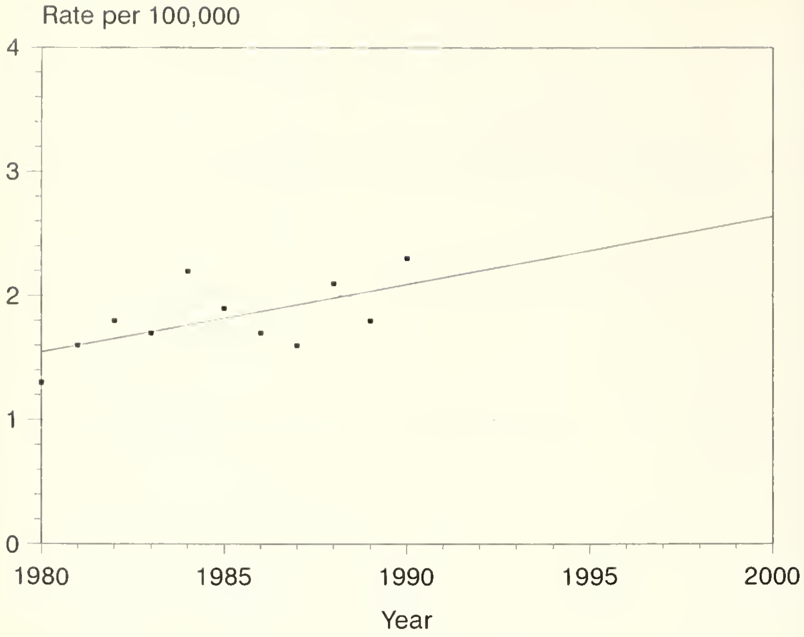

Figure 1 - Increase in Missouri melanoma skin cancer mortality rates from 1980 to 1990 with a projection to the year 2000.

currently 95% population based for the time period 1986 to 1990, enabling detailed analyses of melanoma skin cancer incidence data for this time period. Age-adjusted incidence rates were determined for each county and the entire state of Missouri. Missouri census data from 1990 were used to calculate the expected number of cases for each county based on the age distribution of the county population. Chi-square tests of the observed versus expected number of cases were used to identify Missouri counties with significantly high or low incidence rates.

RESULTS

Figure 1 shows an increase in the melanoma skin cancer mortality rate in Missouri between 1980 and 1990. The rate increased from a low of 1.3 per year per 100,000 population in 1980 to a high of 2.3 per year per 100,000 population in 1990. The projected rate for the year 2000 of 2.6 per year per 100,000 population is twice the baseline rate observed in 1980.

The melanoma skin cancer incidence rate in Missouri during the period 1986 to 1990 was 4.9 per year per 100,000 population. Melanoma skin cancer incidence rates for Missouri by age, gender, and race are provided in Table 1. Unlike many cancers, melanoma skin cancer is relatively common among younger adults, with more than one quarter of cases detected before the age of 45. Incidence rates are similar for males and females, however, nearly all cases (99.3%) are found in Caucasians.

The geographic distribution of melanoma skin cancer incidence for Missouri is shown in Figure 2. Significantly high incidence rates were found in ten counties. These included St. Louis county (7.3 per year per 100,000 population) and several counties with minor metropolitan areas (Columbia, St. Joseph, Joplin, and Sikeston). Elevated, but non-significant rates were concentrated in central and east central Missouri with several smaller clusters in northern Missouri. Significantly low rates were found primarily in St. Louis City, the Kansas City area, and portions of southeastern Missouri.

DISCUSSION

The observed trend in melanoma skin cancer mortality indicates a potential doubling of mortality rates in Missouri every 20 years. Although melanoma skin cancer is currently less common in Missouri than the major cancer sites (e.g., lung, breast, colorectal), it will become a significant problem if current trends continue. However, Missouri has an opportunity to avoid this epidemic through carefully targeted interventions.

The demographic characteristics and geographic distribution of melanoma skin cancer in Missouri are generally compatible with the currently accepted theory that intermittent and severe sun exposure causes this disease.[3] The lower incidence rates in most rural counties can be attributed to the protective effect of regular sun exposure associated with outdoor occupations such as farming. Higher rates in the smaller cities and St. Louis County would be expected if melanoma skin cancer is caused by intermittent and severe sun exposures associated with vacations from the indoor jobs that are more common in these areas. Significantly low rates in the urban areas of St. Louis and Kansas City can be explained by the high prevalence of Blacks. Clear explanations for high rates in the central and east central areas of Missouri are more elusive. However, both of these areas have a very low Black population and a high proportion of retirees from the metropolitan areas of the state. They are also popular outdoor recreation areas in the state. Retirement in these predominantly vacation areas may be associated with more frequent sunny vacations and consequent opportunities for severe sun burns during pre-retirement years. The high rates observed in selected northern

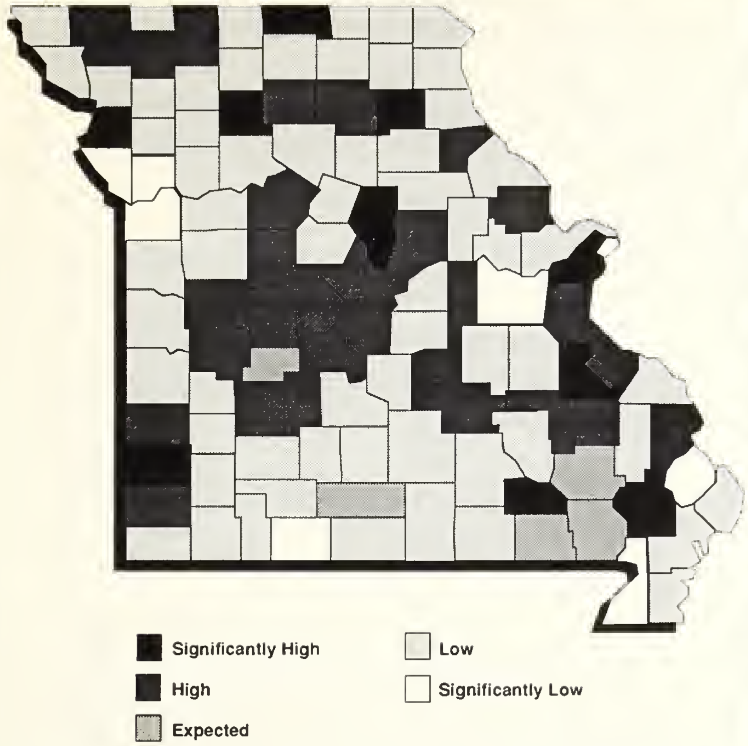

Figure 2 - Geographic distribution of melanoma skin cancer incidence in Missouri counties (1986-1990).

Table 1

Demographic characteristics of melanoma skin cancer incidence in Missouri (1986-1990).

Demographic Characteristic	Number of Cases	Percent of Cases	Incidence* Rate
Age			
00-24	36	2.5	0.4
25-44	348	24.0	4.4
45-64	491	33.9	10.0
65-84	513	35.4	16.1
85+	61	4.2	15.0
Gender			
Male	749	51.7	5.6
Female	700	48.3	4.3
Race			
Caucasian	1,439	99.3	5.4
Black	10	0.7	0.4

* Age-specific incidence rates are given for the age comparisons and age-adjusted incidence rates are given for the gender and race comparisons. All rates are number per year per 100,000 population.

Missouri counties cannot be explained by the currently accepted theory of melanoma skin cancer causation. The unexpected and significantly low incidence rates in the suburban counties surrounding Kansas City may have resulted from under reporting of Missouri cancer cases that are detected and treated in Kansas.

Results from this and other studies imply that melanoma skin cancer prevention programs should be focused on youth and young adults in suburban areas and small cities of the state, where behavior patterns often lead to intermittent and severe sun exposure. Education programs should emphasize avoidance of excessive sun exposure during midday and the use of sunscreens during prolonged exposure. Programs should also alert patients to the skin cancer hazards associated with the ultraviolet radiation from artificial tanning lights.

Physicians and other health professionals can play a direct role in educating patients and encouraging appropriate health behaviors. They can also contribute significantly to school based education programs through brief presentations and discussions with students.

Results from this study show that early detection programs for melanoma skin cancer should be targeted at suburban areas, smaller cities, and recreational/retirement areas of the state. Incidence data in Table 1 indicate that both male and female Caucasians age 20 and older should be targeted for regular skin examinations.

Where resources are limited, early detection programs should focus on high risk populations. An Australian study found that more than half of melanoma cases arise in less than 20% of the population.[12] An American Cancer Society (ACS) professional education publication[13] provides a list of risk factors for identifying individuals at high risk of melanoma skin cancer. The list includes a family history of melanoma, presence of blond or red hair, presence of marked freckling on the upper back, history of three or more blistering sun burns prior to age 20, history of three or more years of an outdoor summer job as a teenager, and presence of actinic keratosis.

The ACS professional education publication also includes excellent photographs of both malignant and benign pigmented lesions and provides detailed guidance for examining patients and diagnosing melanoma skin cancer. A free copy of this pamphlet (ACS-3357-PE) can be obtained by contacting your local American Cancer Society office or by calling the toll free

ACS information number (1-800-ACS-2345). A professional education slide show with script (Cancer of the Skin, 6157.031) is also available on loan from ACS.

CONCLUSION

Action needs to be taken now to prevent a serious epidemic of melanoma skin cancer in Missouri. The public should avoid intermittent and severe sun exposure by reducing sun bathing, using sun screens and protective clothing, and engaging only in recreational activities that can be conducted in the shade or during non-peak hours of sun shine. Individuals at risk should thoroughly examine their skin on a monthly basis, immediately consult a physician if suspicious moles are discovered, and request regular skin exams from their health care provider.

Physicians and other health professionals should counsel all Caucasian patients to avoid unnecessary sun exposure. They should also assist, where ever possible, in broader community education programs. All health care settings should conduct skin examinations during regularly scheduled patient visits and special efforts should be made to examine high risk individuals.

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James R. Davis, PhD, Jian Chang, PhD, Ross C. Brownson, PhD are with the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, 201 Business Loop 70 West, Columbia, MO 65203. Bruce Gibson, BS, is with the Missouri State Center for Health Statistics, Missouri Department of Health, Jefferson City, MO 65210.

Reprint requests to James R. Davis, PhD.

Medical School Applicant Pool: On the Rise

Ted Groshong, MD, Associate Dean for Medical Education
University of Missouri-Columbia School of Medicine

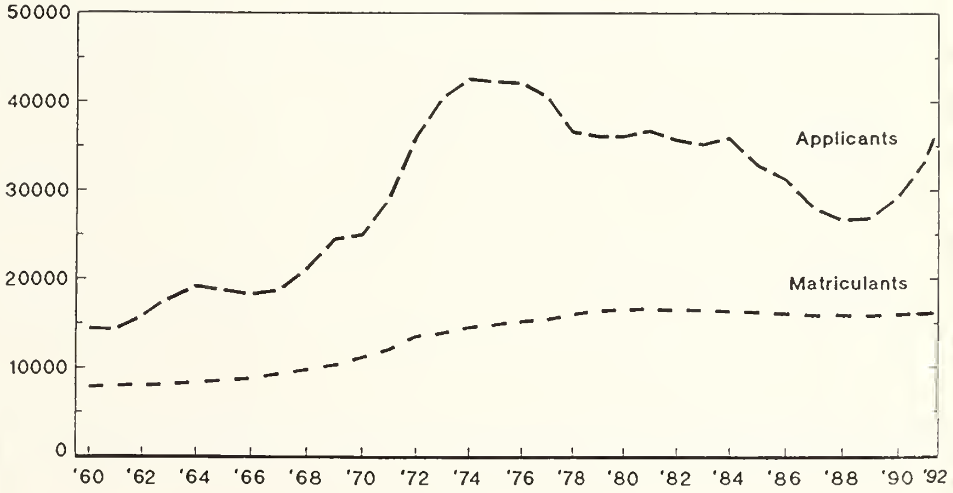
Applications for US Medical Schools have shown dramatic variation over the last 20 years, as have applications for the University of Missouri-Columbia School of Medicine. In recent years, concern that the applicant pool might drop to a point at which less qualified students would matriculate has been replaced with an atmosphere in which many highly qualified students are no longer able to gain admission. As all practicing physicians in Missouri have a vested interest in knowing about the continuing supply of physicians, we believe that a review of current trends in medical school application is particularly timely.

The National Applicant Pool

From 1960 until the mid 1970s, increasing numbers of students were applying for admission to medical school. This coincided with the stated national objective of increasing the supply of physicians for a population perceived as underserved. Both the number of medical schools and positions within medical schools increased dramatically. As a result, applications were received from over 43,000 students to US medical schools in the peak year of 1974. (Figure 1) Subsequently, a dramatic decline was seen with almost one-third fewer students applying by 1988. The applicant to matriculant ratio was down to 1.6, the lowest ratio recorded since 1964.

This period of decline received considerable national attention, with stories appearing in national publications from *The Wall Street Journal*[2] to *Rolling Stone*.[3] It was also accompanied by considerable concern in the academic medical community.[4] Analysts identified a number of sources of disinterest among young people in medicine as a career, largely reflecting unhappiness within the practicing medical community. Prospective medical students, like practicing physicians, expressed concern about the heavy involvement by outside agencies in the practice of medicine, concerns related to the legal environment in which physicians operate, and a recognition that medicine is not likely to be as financially rewarding in the future as it has been in past years. There were also concerns expressed by prospective students related to lifestyle, the likely interference of practice demands on family life, and the continuing demands patients place on physicians. Also of substantial concern is the high cost, both financial and temporal of a career in medi-

Figure 1
Number of Applicants & Matriculants 1960 to 1992 in the United States

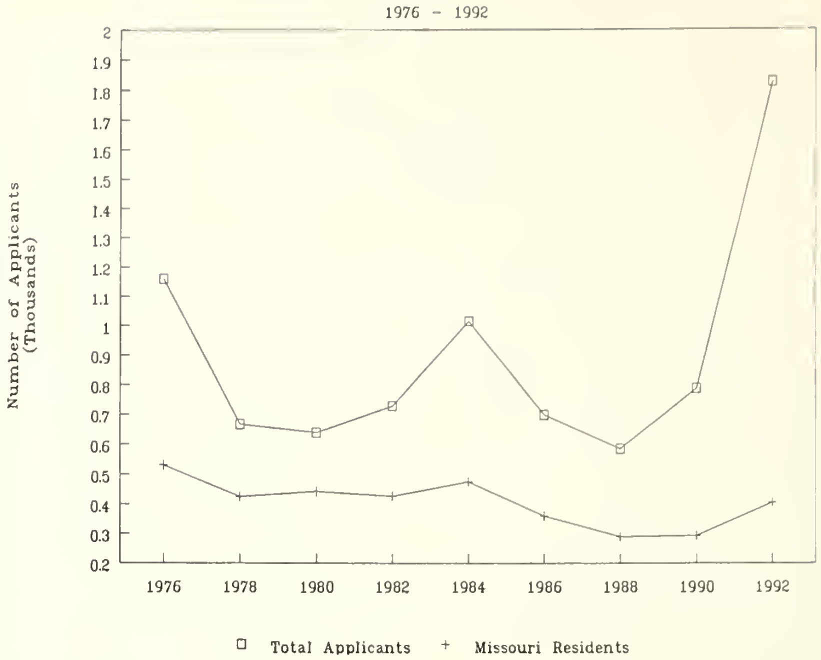


Reprinted from AAMC, Revised, by permission[1] cine.[5]

Beginning in 1988, the situation began to dramatically change, however, with a rapidly rising number of applicants to medical schools. A similar pattern was seen at the University of Missouri-Columbia School of Medicine. Suddenly admissions committees were again inundated with large numbers of highly qualified applicants. (Figure 2)

Unfortunately, increased interest in a medical education has not been accompanied by an adequate increase in applications from undeserved minority populations. While both white and black/African-American applicants increased approximately 32% since 1989, the latter still comprises less than 8% of total applicants to medical school.[6] Interestingly, applications from women continue to increase at a more rapid rate than men, though substantial increases have been seen in both.

Figure 2



Increased competition for medical school admissions has resulted in a continued increase in the average grade point average of students matriculating in medical schools. The average grade point average of all matriculating medical students in the United States was 3.45. With the MU class beginning in 1992, it was 3.53. Science grade point average (biology, chemistry, physics and math) was 3.38 nationally, 3.50 at Mizzou. Interestingly, the average age of applicants and matriculants in medical schools has been increasing steadily, with the mean age at MU hovering around approximately 25 years. This increase in age reflects a sizeable number of students who are entering medical school having previously engaged in other occupations, students who are repeatedly applying for medical school, and women who have taken time out to begin a family prior to beginning their medical career.

Medical School applications are increasing at a rapid rate. Current projections are for an all-time record number of applicants for 1993.[7] Reasons for this rapid increase are uncertain, as conditions used to explain the drop in medical school applications in the late 1980s seem not to have improved. We as physicians practicing in Missouri can be confident that new entrants into our profession will continue to demonstrate the high standards of academic excellence and other personal qualities which have characterized the medical profession.

Acknowledgement: I express my appreciation to Sandra McCurdy, MEd, for help with data and to Mrs. Charmian Boyle for preparation of this manuscript.

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Firearms Injuries in Children:
An Increase in Violent Intent, Frequency and Severity

Laura S. Fitzmaurice, MD; Gary M. Gaddis, MD, PhD; Jane F. Knapp, MD

The frequency of pediatric firearm injuries in the United States have increased at an alarming rate over recent years.[1-6] Trauma case review noted a similar increase in firearms injuries over the past five years at the Children's Mercy Hospital (CMH) in Kansas City, Missouri; a Pediatric Trauma Center located in an urban area. An evaluation of all firearms injuries seen at our institution from 1985 through 1989 was undertaken to further characterize the cases, and to attempt to identify risk factors contributing to the observed increase. We hypothesized that the increased number of firearms injuries over the study period was due to an increase in powder weapons intentionally fired, with a resultant increase in severity of these injuries beyond that previously observed at our institutions.

Methods

The charts of all patients presenting with firearms injuries to the CMH Emergency Department (ED) between January 1, 1985 and December 31, 1989 were reviewed, using a protocol approved by the Pediatric Institutional Review Board of the University of Missouri-Kansas City School of Medicine. Cases were identified through the CMH trauma registry, with cross checking of ED logs to verify that no pediatric firearms injury cases were omitted.

Wounds were classified by type of weapon and circumstance of occurrence. Nonpowder weapons were defined as those propelling a BB, rock, or pellet as the missile. All other firearms were considered powder weapons. An intentional injury was defined as one of the following: drive-by shooting, drug-related shooting, child abuse, homicide, intentionally aimed weapon, or intentionally self-inflicted wound. An unintentional injury was defined as occurring under one of the following circumstances: during cleaning of a gun, after slippage of the gun's safety device, while playing with a gun, after ricochet of the missile, or otherwise unintentionally inflicted.

The epidemiologic variables evaluated included demographics (age, sex, race, and census tract by zip code); injury site(s), length of hospital stay; injury severity score (ISS); and survival rate.

High crime areas included in this study were defined as the five postal code zones in the 107 code Kansas City metropolitan area which have the highest violent crime rates, as defined by Kansas City Police Department records of local census tracts.

The five-year period was divided into two periods for statistical analysis (period 1 - January 1, 1985 to June 30, 1987), and period 2 - July 1, 1987 to December 31, 1989). The chi square statistic was used to assess for statistically significant differences between periods of power versus nonpowder weapon injuries, intentional versus unintentional injury frequencies, and census tract representation among both powder and nonpowder wound groups. The Student's test was used for age group analysis between groups. The Mann-Whitney U test was used to assess ISS. Significance was determined by $P<0.05$. Critical values chosen were for two-tailed tests of significance.

For intentional versus unintentional, and for nonpowder versus powder weapon injuries, the chi square statistic was calculated for three different data matrices. Method number one involved examining only cases where the identity of the weapon or

From Children's Mercy Hospital, Section of Emergency Medicine, Department of Pediatrics, Truman Medical Center Emergency Medicine Department and University of Missouri- Kansas City School of Medicine. Reprint requests to Emergency Medicine Department, Children's Mercy Hospital, 2401 Gillham Road, Kansas City, MO 64108 (Dr. Fitzmaurice).

Table I

PATIENT DEMOGRAPHICS

	Period I	Period II	P Value
SEX			
Male	61	92	P = NS
Female	17	22	P = NS
RACE			
Black	46	75	P = NS
White	27	37	P = NS
Hispanic	5	2	P = NS
AGE (YEARS)			
Mean	11.32	11.07	P = NS
Median	13.00	14.00	P = NS
Mode	13.00	15.00	P = NS
WEAPON HANDLER			
Self	13	20	P = NS
Adult	5	8	P = NS
Child(<16)	27	34	P = NS
Unknown	33	52	P = NS
INJURY SITE			
Head	9 (2*)	12 (6*)	
Face	11	18	
Eye	10	10	
Neck	1	5	
Chest	2 (2*)	9	
Abdomen/ Pelvis	6	9 (1*)	
Extremity	34	40	
Back	4	9	
Multiple	1	2 (1*)	

* Deaths NS = not significant with P>0.05

the intent of the weapon handler was reported. This omitted all unknown cases. Method number two assumed all unknowns involving powder versus nonpowder missiles were powder weapon injuries, and that all unknowns in second half of the time period were nonpowder weapon injuries. This insured that the table developed would be less likely to infer a significant increase in powder weapon injuries during period 2. Similarly, for weapon handler intent, method number two involved placing all unknowns into period 1 as intentional and all unknowns in period 2 as unintentional, so that a significant increase in unintentional injuries would be less likely to demonstrated. Data method number three involved calculation of a 3 x 2 matrix with unknown as a separate row of the matrix.

Results

Comparison of the two time periods revealed a significant increase in total firearm injuries, while maintaining similar distributions for the male/female sex ratio, race, age, and the identity of the weapon handler. Site of injury remained similar in both time frames, with the majority of injuries involving the extremities. The areas injured that were more likely to result in death were found to be the head, chest, and abdomen (Table I).

A significant increase in powder weapon injuries was noted during period 2, without an accompanying increase in nonpowder weapon injuries (Table II). The increase in powder weapon injuries was accompanied by a significant increase in intentional injuries during period 2, but not by any accompanying increase in unintentional injuries (Table II). Statistical significance was obtained for the increased powder and intentional firearms injuries rates during period 2 even by method number two, the most conservative chi square methodology applied. This method allocates unknowns into groups in a manner such that statistically significant increases would be the least likely to be achieve during period 2 for powder weapon injury frequency and for intentional injury frequency.

Injury severity scores (ISS) were markedly higher during period 2 (Table III); the difference in scores between the two periods was significant at P<0.001. the number of deaths during the study, categorized by period and type of weapon, were too small to permit statistical analysis (three cells with cell frequencies of less than 4 occurred in the 2x2 table). However, the absolute number of deaths were greater during period 2 (Table IV).

Table II

Categorization of Injury Type during Period I vs Period II

II A	Period I	Period II
Nonpowder Weapons	47	37
Powder Weapons	21	73
Unknown	10	4
Chi Square		
Method 1	$X^2 = 21.228$ $P < 0.005$	
Method 2	$X^2 = 11.007$ $P < 0.001$	
Method 3	$X^2 = 26.716$ $P < 0.005$	
II B		
Intentional Injury	20	63
Unintentional	48	42
Unknown	10	9
Chi Square		
Method 1	$X^2 = 15.472$ $P < 0.005$	
Method 2	$X^2 = 5.234$ $P < 0.005$	
Method 3	$X^2 = 16.561$ $P < 0.005$	

Table III

Injury Severity Scores (ISS)

ISS	Period I	Period II
n	78	114
median	4	8
range	1 - 41	1 - 75
mode	4	5
Rs = 5161 Z = 6.26	U = 2080 $P < 0.001$	

There were no significant differences during period 1, between high crime and other census tracts, when the frequency of nonpowder weapons, powder weapons, or total weapon injuries were examined in relation to total trauma visits (Table V). Similarly, in period 2 there existed no significant difference for powder or nonpowder wounds as compared to total trauma visits between the high crime and other census tracts (Table V). However, pooling powder and nonpowder wounds into a combined group shows that a significantly greater portion of powder firearm injuries (PFI) was seen during period 2 among patients arriving from high crime census tracts (Table V). When period 1 and 2 were pooled, statistical significance was achieved for the number of patients from high crime census tracts with weapon injuries, as compared to the total number of trauma related visits from each type of census tract (Table VI).

Discussion

This review demonstrates a significant increase in the frequency of firearms injuries incurred by our population. Several authors have reported increases in firearm injuries in their pediatric populations. These increases have been attributed to several factors, including absence of legislation mandating control of sale, storage and distribution of firearms, the involvement of children in drug trafficking, and an increase in gang warfare.[6-9] The increase observed in our population was primarily due to an increase in powder weapons injuries which were intentionally inflicted. During both periods, the greatest number of injuries were inflicted by persons who were claimed to be unknown or not a blood relative of the victim. More of these weapon injuries and deaths were found to occur to children living in high crime areas. This would seem to agree with other investigators' findings associating drug and gang related crimes with increasing firearms injuries[6,7] The first so-called drive by shooting victims - now a commonplace event - were seen in our ED during period 2 of the study.

Another important consideration is that though the frequency of both powder and intentional injuries increased, the unintentional and nonpowder injuries did not decrease in frequency during this time period, and thus still represent a considerable unresolved problem.[10] Issues of proper care and storage of existing weapons, supervision of children around firearms, and education regarding firearm safety cannot be ignored, if the rate of unintentionally inflicted injuries is to decreased.

Table IV

Deaths

Number of Deaths	Period I	Period II
from Powder weapons	2	9
from nonpowder weapons	1	0

Table V

Powder firearm Injuries (PFI) in Relation to Total Trauma Visits

Type of Wound	Census tract	Period I	Period II	P value
powder	high crime	11	43	
powder	other	10	30	
		$X^2=0.343$	$X^2=2.368$	
nonpowder	high crime	26	24	
nonpowder	other	21	13	
		$X^2=1.925$	$X^2=3.316$	
Total PFI	high crime	37	67	
	other	31	43	
		$X^2=1.925$	$X^2=5.322$	$P < 0.05$
Total trauma visits	high crime	5627	11,799	
	other	6605	11,853	

Table VI

Powder firearm Injuries (PFI) in Relation to Census Tract

Type of Injury	Census tract	Number Combined Periods I & II	P value
powder	high crime	54	
	other	40	
		$X^2=2.963$	P=NS
nonpowder	high crime	50	
	other	34	
		$X^2=4.031$	P=NS
Total powder and nonpowder	high crime	114	
	other	74	
		$X^2=10.918$	$P < 0.01$
Total trauma visits	high crime	17,426	
	other	18,458	

As might be expected, higher injury severity scores (ISS) accompanied the increase in powder wounds observed during the latter half of the five year period. Also, though the rate of pediatric firearms deaths during the two periods were too small to permit statistical analysis, an elevated total death rate accompanied the significantly increased powder weapon injuries during period 2.

The use of three methods of chi square testing warrants discussion. Method number one, which ignores the unknown type of intent of injury, clearly delineates the distribution of type of weapon injury and intent to injure when these factors were known. However, method number two permits a more conservative examination of these issues. For weapon type, if all unknowns in period 1 were powder weapons and all unknowns in period 2 were nonpowder weapons, the adjusted data matrix would have a lower likelihood of showing a significant increase in powder weapon injuries during period 2. Similarly, if all cases of unknown intent were actually intentional in period 1 and unintentional in period 2, the adjusted data matrix would have a lower likelihood of documenting a significant increase in intentional injuries during period 2. Despite these theoretical sources of bias, even when unknowns were distributed such that the achievement of statistical significance is made less likely, method number two of chi square testing still documents statistically significant increases for intentionally inflicted injuries and powder weapon injuries during period 2. There remains little doubt that the late 1980s brought an increase in intentionally inflicted powder weapon injuries, as shown by other authors.[3-6]

Conclusion

Violence is a serious problem in the United States affecting children as well as adults. In this study, violent firearms injuries in children were demonstrated to increase at a significant rate over previous years. These violent injuries were also accompanied by a significant increase in severity. We found evidence that these violent firearms injuries were borne more frequently by black male adolescents. There was evidence that a significant portion of the increase in injuries were to residents of high crime census tracts. Since these violent injuries affected some groups more than others, this suggests the value of targeted interventions. Because nonpowder weapon and unintentional firearms injuries did not decline over the study period, the need remains for interventions directed to all populations concerning prevention of injuries.

Acknowledgment

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University Med Schools Respond to Suggestions for Program Shifts

Leaders at Missouri's two state supported schools of medicine respond in this issue of *Missouri Medicine* to the recommendations for changes in medical education programs that were submitted recently to MU's president, George Russell. The recommendations, contained in a report prepared by a panel of medical education experts (see page 242), were announced to the public this March. Russell authorized an in-depth study of the state's medical programs last August after the failure of Proposition B thwarted hopes for increased statewide support for higher education.

The committee complemented the schools for their present excellent programs, but advised that reform is needed to bring the missions of the two schools more in line with available funding and public expectations. The recommendations seem to be a standard shopping list for an organizational spif up. Suggestions include the need to improve efficiencies, coordinate activities and programs better between the schools and the System, and reach out to more minority students. The committee suggests that the educational process be more student centered and responsive to student concerns and grievances.

Few surprises, given the size and complexity of the UM System.

Considered in a broader light, however, the recommendations could serve as a new mandate. Perhaps they even add up to a game plan for a frontal attack on the medical crisis in Missouri, as the problem currently is defined by many individuals and groups.

If such a speculative assessment is correct, these proposals might signal a tacit understanding that Missouri's medical education and research institutions should play a leading role in medical reform in Missouri. Such leadership, mixed with an equal amount of political savvy, will be appreciated as budgets belts continue to get tightened down a notch or two.

No matter what spin one puts on these recommendations, one thing appears certain: luxury programs, interpreted here as "non-relevant" research or subspecialties perceived as being less than essential to large blocks of Missourian voters, soon will make due with fewer bucks. Accordingly, the school will try to make up the shortfall with beefed up fund-raising activities.

The task of implementing these proposed mission realignments (and concurrent resource apportionments) has been assigned by Russell to the chancellors of the two campuses and the respective deans of the medical schools. The ten recommendations begin on the next page, along with responses from Dean Lester Bryant, MD, MU, and Dean James Mongan, MD, UMKC. According to the Deans' comments, many new programs already are being implemented.

For a complete copy of the Report of the University of Missouri Medical Programs Review Panel please contact the Dean's Office at either the MU or UMKC medical schools. The colleges' public information offices supplied information used in this article.

Dennis Weiser, Managing Editor

Recommendation I

Both Colleges of Medicine should be preserved. The mission of each school should be focused on medical education in the context of addressing unmet needs of the citizens of Missouri: urban in the case of UMKC and rural in the case of MU.

BRYANT: "We enthusiastically accept the challenge to address the unmet health-care needs of rural Missouri and are exploring multiple approaches to the complex issues involved in these problems. MU's Health Sciences Center already is responding to requests from rural hospitals in central Missouri to assist them in recruiting and retaining physicians. Collaborative practice models also are being considered that will provide specialty medical support to some rural hospitals and increase their ability to continue to serve their communities, in addition to providing rural training opportunities for our medical students. We aspire to develop the nation's leading model of medical education for delivery of rural health-care services."

MONGAN: "The UMKC School of Medicine and its primary affiliated teaching institutions are properly situated in Kansas City to serve the health care needs of an urban, under-served population in Missouri. Many of our graduates continue to serve in these affiliated institutions following graduation. In addition, our rural preceptorship program gives students exposure to health care settings in rural Missouri communities, where many of our alumni also elect to practice."

Recommendation 2

The University should shift the focus of its education, training, and service programs progressively toward primary care, with particular concern for addressing unmet needs of the citizens of Missouri.

MONGAN: "We support the panel's premise that we should place greater emphasis on primary care. Primary care currently receives strong emphasis in the school's undergraduate curricular programs and in its large residency programs in the Departments of Internal Medicine, Community and Family Medicine, Ob/Gyn and Pediatrics.

"We recently established a stronger emphasis on community medicine and family practice within the school to give students greater access to information on pre- and post-graduate opportunities in family practice. Additionally, our Family Practice Interest Group has created strong interest and participation among the student body in recent years."

BRYANT: "We plan to put a greater focus on our primary-care education program, building on the department of family and community medicine's national reputation for producing primary-care physicians who often choose rural communities for their practice locations. MU already is implementing the first phase of a two-step revision in the curriculum that is designed to emphasize primary care in anticipation of even greater demands for such physicians as part of health-care reform. We agree with the committee's recommendations that it is appropriate for the Health Sciences Center to explore and evaluate new systems of delivery in primary and rural health care. As an example, the Schools of Medicine and Nursing are exploring the feasibility of developing collaborative practice models of nurse practitioners and physicians to address primary-care needs."

Recommendation 3

A more responsive administrative structure must be created between the medical campuses and the University of Missouri System.

BRYANT: "The committee reviewed the Health Sciences Center during the interval before the arrival of the new chancellor and during a transitional governance arrangement for the University Hospitals and Clinics. There is no disagreement with the committee's recommendation that the Health Sciences Center needs to be directed by a single individual with delegated authority from the chancellor for day-to-day decisions and responsibility for strategic planning, budgeting and efficient use of resources."

MONGAN: "A more responsive administrative structure must be created between the medical campuses and the UM System."

Recommendation 4

The University and its Board of Curators should establish one or more mechanisms to achieve prompt, and sometimes

immediate, governance responses to medical center problems, and to enhance communication and integration with extramural clinical units.

"*. . . there is too much competition for the Board of Curators' attention*"

Dean Lester Bryant

MONGAN: "The panel initiated discussion regarding a revised organizational structure to oversee medical school and hospital operations. We believe we have experienced the necessary and appropriate access to key decision-makers in the UM System.Because UMKC's affiliated teaching hospitals are autonomous institutions, any proposed changes to the structure should be reviewed carefully. The affiliated hospitals' boards have communicated with University officials in the past, and we fully expect they will continue to do so. Organizational changes that result in additional bureaucratic layering may impede, rather than facilitate, our mutual efforts to keep the lines of communication open."

BRYANT: "We agree with the committee's conclusion that there is too much competition for the Board of Curators' attention to allow that body to respond to its responsibilities for governing a large health-care facility in a timely fashion. In recommendation 10, the committee urges increased communication and interaction with other health-care providers and with non-university facilities. We also support that concept. One way to achieve greater integration of the Health Sciences Center into the community's health care network is through a community board that advises the chancellor on such issues. Whatever advisory system is developed, greater authority needs to be delegated to the chancellor to make timely decisions."

Recommendation 5

Increasingly constrained resources invariably require reviewing expenditure priorities. Research support should come primarily from extramural sources. Equivalent support need not be sought across all possible disciplines. Specific administrative machinery should be established to monitor progress and to award research funds from University sources on a competitive (mission-relevant and cost/return) basis.

BRYANT: "We generally concur with the committee's recommendation that research support for the Health Sciences Center must come from external rather than state support. In point of fact, the Health Sciences Center is the recipient of the largest amount of research support from external sources for the entire university. Steady growth in research activity has now led to a serious need for a new biosciences research facility for the Columbia campus, and this project is being developed.

"In regard to the committee's recommendation concerning the awarding of research funds from University sources, the University System recently has created a research board to allocate intramural research funding, a program that appears very effective."

MONGAN: "While UMKC's structure is designed to emphasize a clinical orientation, research has become increasingly important. UMKC should reinforce its research agenda through additional faculty and faculty support while continuing to balance its heavy clinical and teaching commitments."

Recommendation 6

The University should reconsider its policy with regard to setting the level of medical student tuition. Failing that, it should undertake a formal study of the actual per student cost for each of its two educational programs.

MONGAN: "We share the panel's concern about tuition rates. As the nations's second highest assessor of tuition among state medical schools, UMKC has previously voiced concerns, echoed by the panel, regarding the potential of effects of continued tuition hikes. We caution against UMKC pricing itself out of the market, causing an eventual decline in qualified applicants. Other concerns regarding the impact of high tuition relate to decreased opportunity for disadvantaged applicants, and to increased student debt, potentially encouraging students to select lucrative subspecialties to retire debt quickly."

BRYANT: "We agree with the committee's concern about indebtedness as a deterrent to the choice of primary or rural care for graduating medical students, but we believe the problem should be approached in ways other than capping tuition. Several states, including Kansas as the most recent one, have developed programs that provided sponsorship for those medical students willing to choose primary care or rural practice careers. House Speaker Griffin's omnibus bill presently being considered by the General Assembly offers a limited medical student loan repayment program that might be combined with other private or community sources of support. In order to respond to the committee's recommendations and Missouri's need for primary and rural health-care providers, we will need to find solutions to the issue of medical education costs for selected students - - and develop resources to put those solutions into action."

"We caution against UMKC pricing itself out of the market . . ."

Dean James Mongan

Recommendation 7

A much more vigorous effort must be made, particularly at this time, to identify sources of financial aid for students, especially for those from disadvantaged backgrounds.

BRYANT: "This recommendation relates closely to the previous one and will require similar efforts to seek sponsorship for those students who are willing to meet society's needs in exchange for help with the cost of their education. We will look more closely at the approach that other states have taken to address these issues and explore all possible means to find solutions."

MONGAN: "One of our major thrusts of recent years has been to develop ways to recruit and retain disadvantaged students. The well-established Summer Scholars program has identified many local minority and disadvantaged high school students who have the aptitude and interest to pursue medical careers. Some of the students introduced to medicine through this program are currently enrolled in or have graduated from our program.

Through our Office of Minority Affairs, established to address recruitment and retention of such students, we are finding that a number of qualified minority candidates unfortunately will not consider UMKC in larger numbers until greater financial (scholarship) incentives are available."

Recommendation 8

Steps should be taken to ensure that the students on both medical schools campuses are acquainted with appropriate grievance procedures.

MONGAN: "School officials were previously unaware of concerns in this area. The school's organization includes multiple grievance and appeals avenues for students. Any specific problems identified in this area should be pursued."

BRYANT: "Discussions of this recommendation with officers of the medical school classes on the Columbia campus failed to show a lack of knowledge about grievance procedures. However the Office of Medical Education in the medical school will reinforce the procedures to assure that all students have the correct information."

Recommendation 9

Bonding authority probably should be used more extensively as a source for capital.

BRYANT: "We agree with the committee's suggestion that the Board of Curators' bonding authority is an appropriate funding vehicle for Health Sciences capital projects. The most immediate need for the University Hospital is a replacement of its critical care units and upgrading of the emergency department and diagnostic facilities. It is anticipated that the project will largely be funded by bonded debt. A strategic plan for overall capital needs and their funding is being developed."

MONGAN: "UMKC was not directly involved in conversations with the panel regarding capital financing. However, such discussions do relate to the need for continued support to establish a facility on Hospital Hill for UMKC's biological sciences, pharmacy, and nursing programs."

Recommendation 10

Vigorous steps should be taken to increase communications between, and interaction among, the medical campuses' service and educational activities and those of non-university, community entities that may be pur-

suing similar activities in the public interest.

MONGAN: "UMKC is always interested in joint activities with MU. However, it is often difficult to coordinate collaborative programs because of the 120-mile separation. We advocate continued shared resources when possible, such as the exchange of visiting faculty and students on rotations.

"UMKC's primary teaching hospitals, and in particular Truman Medical Center Corporation and the Children's Mercy Hospital, provide significant services in response to city and county needs in the greater Kansas City area. There is a strong historical record of cooperation between the affiliated hospitals and local governmental agencies.

"Members of our student organizations and many faculty members participate in a variety of community health awareness and prevention activities at Kansas City schools, and provide clinical assistance at the Kansas City Free Health Clinic."

BRYANT: "We agree with the committee's recommendation that the Health Sciences Center should make every effort to be more collaborative with non-university agencies and health-care entities in meeting Missouri's needs. In fact, efforts to support and enhance rural health care will certainly require networking with rural hospitals and rural physicians. In addition, it is anticipated that components of health-care reform, specifically 'managed competition,' will offer opportunities for the University Hospitals and Clinics to seek joint approaches to health-care delivery with other providers. At the same time it is important to emphasize that the responsibility for indigent care must be shared by other health-service providers in the area. Although a good deal of distance separates the UM System's two medical schools, we hope in the future to take advantage of new video-conference technology that will provide greater opportunities for shared teaching expertise between MU and UMKC."

University of Missouri Medical Review Panel

Vernon E. Wilson, MD, Chairman*
Mt. Pleasant, SC
Merlin K. Du Val, MD, Vice Chairman
Phoenix, AZ
Edward N. Brandt, Jr., MD, PhD
Co-director, Center for Health Policy Research and Development University of Oklahoma School of Public Health
Oklahoma City, OK
Eli Ginzberg, PhD**
Director, Eisenhower Center for the Conservation of Human Resources
Columbia University
New York, NY
Robert Q. Martson, MD
Alachua, FL
Richard H. Moy, MD
Provost and Dean
Southern Illinois University School of Medicine
Springfield, IL
Stanley W. Olson, MD
Rockford, IL
C.H. William Ruhe, MD
Rio Verde, AZ

* Dr. Wilson died on Dec. 25, 1992

** Dr. Ginzberg prepared appendiceal material but otherwise did not participate in the committee's activities.

1992 Contributors to the Missouri Physicians' Health Program

Alexian Brothers - Medical Staff
St. Louis

Boone Hospital
Columbia

Boone Hospital - Medical Staff
Columbia

Christian Hospital Northeast/Northwest
St. Louis

Christian Hospital Northeast/Northwest - Medical Staff
St. Louis

DePaul Hospital - Medical Staff
St. Louis

Freeman Hospital
Joplin

Heartland Hospital
St. Joseph

Heartland Hospital - Medical Staff
St. Joseph

Incarnate Word Hospital
St. Louis

Incarnate Word Hospital - Medical Staff
St. Louis

Independence Regional Health Center
Independence

Independence Regional Health Center - Medical Staff
Independence

Jewish Hospital of St. Louis
St. Louis

Lutheran Medical Center - Medical Staff
St. Louis

North Kansas City Hospital Medical Staff
North Kansas City

Medical Center of Independence
Independence

Medical Center of Independence - Medical Staff
Independence

Menorah Medical Center - Medical Staff
Kansas City

Moberly Regional Medical Center
Moberly

Moberly Regional Medical Center - Medical Staff
Moberly

Momedico
St. Louis

Phelps County Regional Medical Center - Medical Staff
Rolla

Research Medical Center - Medical Staff
Kansas City

Risk Control Associates
Springfield

St. Anthony's Medical Center
St. Louis

St. Anthony's Medical Center - Medical Staff
St. Louis

Ste. Genevieve County Memorial Hospital - Medical Staff
Ste. Genevieve

St. John's Regional Medical Center - Medical Staff
Joplin

St. Joseph Health Center - Medical Staff
Kansas City

St. Joseph Health Center - Medical Staff
St. Charles

St. Luke's Hospital - Medical Staff
Kansas City

St. Luke's Hospital
St. Louis

St. Luke's Hospital - Medical Staff
St. Louis

St. Mary's Hospital - Medical Staff
Jefferson City

St. Mary's Hospital - Medical Staff
Blue Springs

Spelman Memorial Hospital - Medical Staff
Smithville

Spelman / St. Luke's - Medical Staff
Kansas City

Trinity Lutheran Medical Center
Kansas City

Trinity Lutheran Medical Center - Medical Staff
Kansas City

Truman Medical Center - Medical Staff
Kansas City

Western Missouri Medical Center - Medical Staff
Warrensburg

NEW MEMBERS

❖ Conrad S. Balcer, DO, 1111 Madison, Jefferson City, MO 65101, has become a member of the Cole County Medical Society. Dr. Balcer received his doctor of osteopathy at the University of Health Sciences, College of Osteopathic Medicine, Kansas City in 1986. He completed his residency at the Chicago Osteopathic Medical Centers, Chicago, IL. Dr. Balcer specializes in internal medicine.

❖ Robin S. Biermann, MD, 915-J Southwest Blvd., Jefferson City, MO, has become a member of the Cole County Medical Society. Dr. Biermann received his medical degree at the University of Illinois, Chicago, in 1988. He completed his residency at the University of Missouri-Columbia. Dr. Biermann specializes in diagnostic radiology.

❖ Debra A. Buckler, DO, St. Mary's Geriatric Service, P.O. Box 342, Jefferson City, MO 65101, has become a member of the Cole County Medical Society. Dr. Buckler received her doctor of osteopathy at Kirksville College of Osteopathic Medicine in 1986. Dr. Buckler completed her residency at Sinai-Samaritan Hospital, Milwaukee, WI. Dr. Buckler specializes in internal medicine.

❖ James M. Cummings, MD, 3635 Vista Ave. at Grand Blvd., St. Louis, MO 63110-0250, has become a member of the St. Louis Metropolitan Medical Society. Dr. Cummings received his medical degree at the University of South Alabama, Mobile, AL, in 1982. He completed his residency at St. Louis University Hospitals. Dr. Cummings specializes in urology.

❖ Narendar K. Datta, MD, 10004 Kennerly Rd., Suite 289B, St. Louis, MO 63128, has become a member of the St. Louis Metropolitan Medical Society. Dr. Datta received his medical degree at Government Medical College, Patiala, India, in 1962. He completed his residency at St. Louis University Hospitals. Dr. Datta specializes in obstetrics and gynecology.

❖ Charles Evans, MD, has become a member of the Cole County Medical Society. Dr. Evans received his medical degree at Jefferson Medical College, Philadelphia, PA, in 1967. He completed his internship at Lower Bucks Hospital, Bristol, PA. Dr. Evans specializes in occupational medicine.

❖ Herbert A. Ferrari, MD, 3635 Vista Ave. at Grand Blvd., St. Louis, MO 63110-0250, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ferrari received his medical degree at the University of Buenos Aires School of Medicine, Argentina, in 1954. He completed his residency at Rawson Hospital, Argentina. Dr. Ferrari specializes in anesthesiology.

❖ Ann H. Gettel, MD, Children's Mercy Hospital, 24th & Gillham, Kansas City, MO 64108, has become a member of the Missouri State Medical Association. Dr. Gettel received her medical degree at Louisiana State University of Medicine, New Orleans, in 1987. She completed her residency at the University of Colorado Health Sciences Center, Denver. Dr. Gettel specializes in physical medicine & rehabilitation.

❖ Kathryn A. Hembree, MD, Westown VII, Liberty, MO 64068, has become a member of the Clay-Platte County Medical Society. Dr. Hembree received her medical degree at the University of Missouri-Kansas City, in 1986. She completed her residency at the University of Arkansas, Little Rock. Dr. Hembree specializes in ophthalmology.

❖ James P. Lukavasky, MD, 548 N. Business Hwy 65, Branson, MO 65616, has become a member of the Tri-Lakes Medical Society. Dr. Lukavasky received his medical degree at Crieghton University, Omaha, NE, in 1984. He completed his residency at Truman Medical Center, Kansas City, MO. Dr. Lukavasky specializes in family practice.

❖ Marvin R. Rush, MD, Rt. 1, Box 13860, Ste. Genevieve, MO, has become a member of the Perry - Ste. Genevieve Medical Society. Dr. Rush received his medical degree at Indiana University School of Medicine, Indianapolis, in 1979. He completed his residency at Deaconess Hospital, Evansville, IN. Dr. Rush specializes in emergency medicine and family practice.

❖ Howard S.J. Walker, MD, 675 Old Ballas Rd, Suite 200, St. Louis, MO 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Walker received his medical degree at Baylor College of Medicine, Houston, TX, in 1974. He completed his residency at the University of Alabama, Birmingham, AL. Dr. Walker specializes in vascular surgery.

❖ William D. Yates, 11155 Dunn Rd, 102N, St. Louis, MO 63136, has become a member of the St. Louis Metropolitan Medical Society. Dr. Yates received his medical degree at Northwestern University, Chicago, IL, in 1984. He completed his residency at Howard University. Dr. Yates specializes in general surgery.

STUDENT

University of Missouri-Kansas City

Mark A. Winchell

I'm gonna sit right down and write myself a letter...

Maria Evans, MD, Columbia

Whether you're a fan or a foe of Hillary Rodham Clinton, there's no doubt that she appears quite intent upon making some changes in the way this country delivers health care. During the week I worked on this article, she met with representatives of the insurance industry, retirees, and farm families in Iowa.

As I cruised through all the articles, commentaries, and letters to the editor that are being generated about the First Lady's work, a gaping hole in her itinerary began to emerge. Although physicians and physician groups have managed to garner a modest spot on her itinerary, problems of medical students and resident physicians received no attention whatsoever. As I pondered the role of resident physicians in our present health care system, several thoughts emerged:

- ❐ Resident physicians of ALL specialties, not just primary care, presently provide a good deal of care to the indigent, the uninsured, and the underinsured in this country, be cause the bulk of such provider programs are associated with teaching hospitals.

- ❐ No study has, of yet, shown a direct correlation between medical school student loan debt and specialty choice. It still remains one of many factors in the equation. Could the spectra of debt be down played by the residents themselves in interviews/question naires? After all, no one likes to air their money problems in public.

- ❐ Little information is available on how level of debt affects the personal lives of residents. Do we really have a handle yet on how resident debt affects the mental and physical health of residents, their marriages, their attitude toward patients? How will it affect their willingness to provide pro bono care to those in need? Truthfully, no one has answered those questions yet to my satisfaction and I see a great opportunity for Ms. Clinton to address these issues. After all, if we truly care about the health of our nation's citizens, we must not neglect the citizens who provide the care.

- ❐ Although primary care is certainly the cornerstone of any meaningful health care reform, the popular press is falling into the tendency to characterize primary care doctors as good guys and specialists as bad guys. Could this create a rift in the bargaining power of our state and national multispecialty organizations, including resident physician organizations? Conceivably, I could see the focus moving away from health care reform and towards internal fighting.

The more I thought about these sorts of issues, the more I realized that my input was important. I also realized that my viewpoint was one of a person living in both worlds, so to speak, since several of my own relatives, including my dad, are a few of the famous 37 million uninsured in this country. My biggest hope is that someday they don't have to lie awake nights worrying about what would happen to them if they were sick or injured. My biggest fear is that we will create a system that will put them at the mercy of forces outside their control.

So, one night I sat down and made a list of many of the concerns of resident physicians. One by one, once a month, I'm going to take five minutes and write Hillary Rodham Clinton a letter about it... Nothing heated, nothing inflammatory, just a *Hi!-Here's-the-concern-from-the-trenches-this-month* letter. Maybe no one will listen, but if many of us do the exact same thing perhaps they will.

University of Missouri - Columbia

The Missouri Coordinating Board for Higher Education has approved a plan to establish the first doctoral degree program in nursing to be offered by the University of Missouri. Approved by the Board of Curators in June 1992, the program will be a cooperative effort between the University's campuses at Columbia, St. Louis and Kansas City. Students could be admitted to the program starting in the fall of 1993.

It is estimated by the year 2000 Missouri would need 580 to 840 nurses prepared at the doctoral level. Projections indicate that there will only be 149 nurses of this level at that time. The shortage is significant to Missouri because of the state's large and growing number of persons age 65 or older and there are large numbers of urban and rural poor with little or no access to health care. The program also will help keep nursing talent from leaving the state.

The doctoral degree combines advanced knowledge and skills in clinical practice and nursing research. The merger of applied nursing sciences with theory and research allows for leadership as nurses increasingly become primary-care providers and managers of health care programs.

St. Louis University

In order to help meet the growing demand for primary care physicians, St. Louis University School of Medicine in establishing a program in family medicine. To reflect this expansion, the department of community medicine will be renamed as of July 1 to the department of community and family medicine. The university is teaming up with the family medicine departments at Deaconess Hospital and St. John's Mercy Medical Center to provide students with family practice experience.

George M. Matuschak, MD, associate professor of internal medicine in the division of pulmonology and pulmonary occupational medicine and co-director of the medical intensive care unit, has received a grant from Cortech, Inc. to study the effect of altering the body's acute inflammatous response to severe infections. Dr. Matuschak will determine whether the drug CP-0127, which blocks the binding of bradykinin to cells, will improve ICU patients' survival.

Jill A. Ohar, MD, associate professor of internal medicine in the division of pulmonary occupational medicine, has received a grant to study the drug enoxaparin, a form of the blood thinner - heparin. Dr. Ohar is researching the use of the drug to prevent blockage of a pulmonary artery by thrombus.

Gary Spitzer, MD, professor of internal medicine and director of the division of bone marrow transplantation, oncology and hematology, has received a grant from Amgen Inc. for his study of the effectiveness of administering bone marrow prior to and after high dose chemotherapy for cancer patients. Dr. Spitzer and co-researchers hope the two doses will reduce the toxicity to the chemotherapy drugs.

Washington University

Research led by **John-Stephen Taylor, PhD,** associate professor of chemistry at Washington University proposes a new mechanism for the formation of the genetic mutations linked to skin cancer. Study of carcinomas have found cytosine (C) and thymine (T) mutations in DNA. CC to TT mutations, in particular, have been found to be a fingerprint for ultraviolet light damage. When Ultraviolet light hits DNA, it can react with Cs and Ts, abnormally fusing T with a T and C with T or C with C. When the cells divide, these fused bases cause mutations in the DNA to occur, which only cause cancer when they occur at a particular site. Major alterations to DNA are easily detected by repair enzymes, but some types of damage are so slight that they get overlooked by the enzymes and result in cancers.

The result of these basic research findings will help find the pathways from the sun to the mutation that leads to cancer in order to know which photoproduct is responsible to screen out specific wavelengths of light when designing sunscreens. Dr. Taylor foresees the development of drugs that can be used to intervene in the mutagenic process stopping or reversing its damaging effects.

Mary Graham, MD, instructor of radiology, is the lead author of a study that is investigating the racial gap between whites and blacks with lung cancer. Blacks are more likely to get lung cancer, and they die of it more often and more quickly. The study is to be one piece of data that suggest there are not biologic differences but social and environmental factors to account for these differences.

Dr. Graham evaluated data from 1,701 patients who had been treated for inoperable non-small-cell lung cancer at multiple medical institutions. When blacks and whites receive the same level and quality of medical care, the racial gap in survival for lung cancer is not apparent. Median survival time was nine months in blacks, 10 months in whites. One-year survival rates were between 40 percent for whites and 44 percent for blacks; two-year survival rates were 17 percent in whites and 15 percent in black patients.

The only significant difference between the races was in the amount of weight loss; 24 percent of black subjects began the clinical trial with weight loss of more than 10 percent, compared to 13 percent for whites.

Incidence of the disease has increased since the 1950s, and the rate of increase is highest among black males. Although the survival rates have improved for white populations, they have not improved for blacks. In fact, the death rate from lung cancer for black men is 45 percent higher than for non-minority men. The gap is not limited to lung cancer. When all cancers are considered together, black Americans have a 12 percent lower five-year survival rate and an 11 percent higher incidence rate compared to whites.

People who have a history of sudden death in their families can choose DNA screening to find out if they harbor such genes. Once a genetic disease is diagnosed, many patients want to know its severity. While the question is unanswerable, researchers are a step closer to providing the information.

Daniel P. Kelly, MD, assistant professor of medicine, **Steven R. Bergmann, MD, PhD,** associate professor of medicine, and **Burton E. Sobel, MD,** Tobias and Hortense Lewin Professor of Cardiovascular Diseases, suspected that the positron emission tomography (PET), which can see how the heart uses energy, might help separate patients into groups according to the severity of their disease. PET showed that the hearts of sick patients do not use fatty acids as efficiently as those in the normal control group. Patients with LACD deficiency differ; some appear to handle fatty acids better then others. This may allow physicians to begin to stratify different forms of LACD deficiency and to identify other related forms of inherited heart disease.

These PET studies are a first step toward providing more complete information about the progression of genetic diseases affecting the heart and help identify patients who should be treated more aggressively.

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■ **Lawrence S. Crispell, MD,** Sarasota, Florida, died March 2, 1993, at age 74. Dr. Crispell received his medical degree at Yale Medical School in 1944. He served as a captain in the U. S. Army Medical Corps. Dr. Crispell worked at Mary Hitchcock Clinic in Hanover, New Hampshire, for four years before beginning private practice in Joplin, Missouri, in 1953. He retired in 1986. Dr. Crispell was a member of the Jasper County Medical County Medical Society, the American Society of Otorhinolaryngology.

■ **Frede Mortensen, MD,** Webster Groves, Missouri, died March 4, 1993, at age 66. Dr. Mortensen received his medical degree at New York Medical College in 1953. Dr. Mortensen was in private practice for 35 years at the Grandel Medical Group of Sunset Hills until retirement this year. He was a past chairman and a former member of the governing board of Lutheran Medical Center. He was a physician at Concordia Seminary and on the staffs of St. Joseph Hospital and St. Anthony's Medical Center. Last year he went on a medical mission to the former Soviet Union.

■ **Esther W. Overstreet, MD,** Kansas City, Missouri, died March 19, 1993, at age 86. Dr. Overstreet received her medical degree at the University of Kansas, Lawrence-Kansas City, in 1935. She was a family physician in Kansas City for 51 years until retiring in 1987. Dr. Overstreet was on staff at Research Medical Center and Baptist Medical Center. She received the Metropolitan Medical Society Merit Award and was named Family Physician of the Year by the Kansas City Academy of General Practices in 1965. Dr. Overstreet founded and was past-president of the Kansas City chapter of the American Women Physician's Association. She was also a member of the American Academy of Family Physicians.

■ **Lawrence Pifer, MD,** St. Joseph, Missouri, died February 10, 1993, at age 71. Dr. Pifer received his medical degree at Indiana University School of Medicine, Bloomington, Indiana, in 1953. He practiced medicine in St. Joseph since 1953, and was associated with Specialists of Internal Medicine at the time of his death. He was in the Army Air Corps during World War II, and was the sole survivor of a B-24 crash on December 7, 1944, in California. Dr. Pifer was a member and past president of the Buchanan County Medical Society, a member of the Missouri State and American Medical Associations, and the Aerospace Medical Association.

■ **Donald K. Piper, MD,** Leawood, Kansas, died March 22, 1993, at age 77. Dr. Piper received his medical degree at the University of Kansas School of Medicine in 1944. He was a member of the university's 1937 NCAA championship basketball team. Dr Piper served in the Navy during World War II and the Korean War. He was founder of the medical museum at the St. Joseph Health Center, a member of the Association of Orthopedic Surgery, the American Academy of Orthopedic Surgery, the Jackson County Medical Society and the American Medical Association. He was past president of the Kansas City Orthopedic Society and the St. Joseph Health Center medical staff. Dr. Piper was also an artist whose work was presented on the April 1992 cover of *Missouri Medicine.*

■ **Joseph R. Prokop, MD,** St. Joseph, Missouri, died March 6, 1993, at age 63. Dr. Prokop received his medical degree at Hannemann Medical College, Philadelphia, Pennsylvania, in 1959. Dr. Prokop was in practice with Dr. Horst Agerty in Philadelphia for six years before joining the Thompson, Brumm & Knepper Clinic in St. Joseph. He was on the staffs at both the former St. Joseph's Sisters Hospital and Missouri Methodist Medical Center. Dr. Prokop was a Diplomate of the American Academy of Pediatrics, a member of the Buchanan County Medical Society, the Delaware County (Penn.), Medical Society, the Pennsylvania Medical Society, the Missouri State and American Medical Associations, St. Joseph Physicians, Inc. and a board member of Health Choice.

■ **Bruce Shackter, MD,** Springfield, Missouri, died January 11, 1993, at age 57. Dr. Shackter received his medical degree at the University of Illinois School of Medicine, Chicago, in 1960. He was an orthopedic surgeon in Springfield with Ferrell-Duncan Clinic from 1966 to retirement in 1989. After retirement, Dr. Shackter began helping AIDS patients. He was a founding member of the Interfaith AIDS Network, and organized support for Stephen's House, a shelter for homeless people with AIDS.

Letters of tribute will be considered for use in the IN MEMORIAM section of MISSOURI MEDICINE as space permits. Tributes to Dr. W.F. Oehler appear on page 251.

Hospital Medical Staff Section
21st Assembly Meeting
Chicago Marriott Hotel
June 10-14, 1993

Reform of the American health care delivery system is the issue of the 90s. The public and political debate over changing our health care delivery system is intense. Significant reform legislation has already been passed in several states. To help you lead your organization in a time of major change, three educational programs will be part of this HMSS Assembly Meeting.

Negotiations and Conflict Resolution
Gain new skills to effectively provide leadership in negotiating and resolving conflicts that arise in the process of health care delivery. Learn to frame negotiation in the best interests of all parties, to listen actively, to use positional bargaining and avoid surprises.

Review and Analysis of President Clinton's Health Care Reform Plan
President Clinton is expected to release his new health care reform plan in May. Participants in this session will hear a full review and analysis of the plan from leading experts in the medical field.

Challenge and Change in the Managed Care Environment
Develop a comprehensive understanding of the current environment in health care highlighted by a discussion of the impact of President Clinton's plan on health care delivery system reform. Discover steps physicians can take to deal with the realities of managed care.

Don't miss this opportunity to acquire leadership skills to help your physician community succeed!

For more information, please call
312 464-4754 or 464-4761.

Hospital
Medical
Staff
Section

American Medical Association
Physicians dedicated to the health of America

In Tribute to William F. Oehler, MD

1907 - 1993

Cape Girardeau, Missouri

Dr. Oehler represented the epitome of the American physician through the years that I knew him. He was always dressed in well fitting and appropriate attire. The only times I saw him without a coat and tie would be in the operating room when he was wearing a "scrub suit."

He also had a great love for the Cadillac automobile - great pride in always driving a recent model, always clean and in excellent condition. I remember as a still young doctor in 1968 when I had at last accumulated enough money to buy a $6,200 green Cadillac, I was not too careful in how I took care of it. One day he said, "Charlie, if you are rich enough to own a Cadillac you can afford to keep it clean." I never forgot that advice, even though I am afraid I did not heed it.

Another proper example Dr. Oehler demonstrated was in the way he obtained consultations; instead of writing it on the order sheet or telling a nurse to call Dr. McGinty to look at a patient for a possible gallbladder problem, he would call me and make an arrangement so he could take me in and introduce me to the patient after he had filled me in with all the details of the patients illness. Then he would speak with me almost daily about the progress the patient was making.

Those days may be gone forever. Bill Oehler set an example for the rest of us.

Charles P. McGinty, MD

In the spring of 1938, Dr. Oehler and his wife Jeanette, together with the Carters, Jeanette's parents, came to my office to discuss the feasibility of Cape Girardeau as a place to live and as a location to practice medicine.

At the time of that visit I assured him that Cape Girardeau was a good community with opportunities to succeed.

Bill was not a stranger to me, I had known him since 1928 when we both entered St. Louis University Medical School. I found him to be a pleasant young man. After several months he withdrew from the program and later pursued his training at the University of Illinois in Chicago.

Dr. Oehler became a staff member at both St. Francis Hospital and Southeast Missouri Hospital. In due time he served as Staff President of each of the two hospitals.

During the years of War World II, he gave anesthesia at St. Francis Hospital in the department of surgery.

After the war he returned to his general practice which included uncomplicated obstetrics.

Early in the marriage of Bill and Jeanette, their daughter Carol was born. Soon after her birth it was found that the baby they had so joyfully anticipated was afflicted with Down's Syndrome. Bill and Jeanette were shocked, but they soon regained their composure. They gave their child the best care and dedicated love.

After about four decades of happy life together, within the span of a few years, these three left this world for eternity.

They presented us an example of love, courage and constancy.

Raymond A. Ritter, MD

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CME CALENDAR

The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send CME information for listing in *MISSOURI MEDICINE*. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

May

Every week to Oct. 1, 1993. AIDS, Malpractice, OSHA and Medicare. 28 resort-based classrooms. Contact American Educational Institute, Inc., 401 S. Woodward, Suite 333, Birmingham, MI 48009, 800/354-3507, fax 313/433-0615.

5 - *St. Louis*: Update in Thoracic Surgery. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

5 - *St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Recertification Course. 7 credit hours. Contact Mary Beth Foerstel, St. Louis University, 314/577-5385.

6 to 8 - *St. Louis*: WUMCAA Reunion. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

6 to 9 - *St. Petersburg, FL*: Diagnosis and Treatment of Physician's Liability Issues. 11 credit hours. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

6 to 9 - *Pentagon City, VA*: Practical Dermatology for the Primary Care Physician, 19th Edition. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

7 - *Springfield*: ACLS Recertification Course. 8 credit hours. Call Donna Willoughby, Cox South, 417/885-4117.

7 - *St. Louis*: Toxicology Symposium - Cardinal Glennon Children's Hospital Regional Poison Center. 5 credit hours. Contact Robert W. Jaeger, 314/772-8300.

7 & 8 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Approaches to Cranio-Cervical Fixation. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

8 - *St. Louis*: Current Gidelines for Office Management of Patients with Cardiovascular Disease. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

8 - *Washington, DC*: Acoustic Neuroma: Advances in Diagnosis and Management. 7 credit hours. Contact John F. Vargo, George Washington University, CME, 202/994-4285.

10 - *St. Louis*: MR Imaging of the Pelvis. City-Wide Radiology Conference by Jeffrey Weinreb, MD. Contact R. Gilbert Jost, MD, Mallinckrodt Institute of Radiology, 510 South Kingshighway, St. Louis, MO 63110, 314/362-7130.

11 to 13 - *St. Louis*: Doppler Echocardiography Course. 20 credit hours. Contact Dianne Reid, St. Louis University, 314/577-8897.

12 - *St. Louis*: Updates in Occupational Medicine. 4 credit hours. Contact Judith L. O'Guin, St. John's Mercy Medical Center, 314/569-6290.

13 - *St. Louis*: Current Perspectives in Menopausal Problems. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

13 to 16 - *Washington, DC*: Central Atlantic Seminar in Anesthesiology. 12 credit hours. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

14 - *Kansas City*: Practical Cardiology. 5.5 credit hours. Contact The Ed Bixby Institute, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132, 816/276-4306, 800/892-5771, ext. 4306 in MO, 800/821-5140, ext 4306, bordering states.

14 & 16 - *St. Louis*: Computer Multimedia Applications for Medical Practice. 21 credit hours. Contact St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

15 - *St. Louis*: Coronary Artery Disease in Women. 3.75 credit hours. Contact Washington University, 314/362-6893 in MO - 800/325-1087 Interstate.

15 - *Joplin*: Sports Medicine Spring Symposium. 4 credit hours. Contact Joy Barnett, Freeman Hospital, 417/625-6612.

17 to 22 - *St. Louis*: Health Care Ethics in a Pluralistic Society. 43 credit hours. Contact Donna Troy, St. Louis University, 314/577-8195.

19 & 20 - *St. Louis*: Focus on Surgery in Pediatrics. 8 credit hours. Contact Judith L. O'Guin, St. John's Mercy Medical Center, 314/569-6290.

20 to 22 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop: Temporal Bone Surgical Dissection - Exploring New Surgical Instrumentation with Midas Rex Hands-On Workshop. 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

21 & 22 - *St. Louis*: Working with Abusive Families: A Strategic Approach to Violence and Incest. 10 credit hours. Contact Judith L. O'Guin, St. John's Mercy Medical Center, 314/569-6290.

22 - *St. Louis*: Midwest Cardiology Debates. 6 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

23 - *St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprhensive Approach to Radial and Astigmatic. 7 credit hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

26 - *St. Louis*: Neonatal Pharmacology. 6.25 credit hours. Contact Patricia Nash, St. Louis University, 314/577-5631.

June

3 & 4 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Advanced Applications in Endoscopic Neurosurgery. 14 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

6 to 11 - *Virginia Beach, VA*: **Ninth Annual EVMS Family Medicine Review Course.** Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

7 to 9 - ***St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part I: Peripheral Nerve.** 22 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

8 & 9 - ***St. Louis*: Transesophageal Echocardiography Course.** 13 credit hours. Contact Dianne Reid, St. Louis University, 314/577-8897.

10 to 12 - ***St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part II: Spine-Microsurgery & Stabilization.** 24 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

11 & 12 - ***Columbia*: Primary Pediatrics.** Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

11 & 12 - ***St. Louis*: Alzheimer's Disease.** Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

12 - ***St. Louis*: Treating Ischemic Stroke.** Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

12 to 16 - ***Arlington, VA*: Board Review in Family Practice.** 41 credit hours. Contact John F. Vargo, George Washington University Medical Center, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

14 - ***Springfield*: PALS Recertification Course.** 7.5 credit hours. Call Cox South, 417/885-6111.

14 to 19 - ***St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part III: Microsurgery of the Brain.** 36 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

17 & 18 - ***St. Louis*: State of the Art Symposium on Allergic Diseases.** 18.5 credit hours. Contact Office of CME, Washington University School of Medicine, Campus Box 8063, 660 S. Euclid Ave., St. Louis, MO 63110-1093, 314/362-6893 in Missouri, 800/325-9862 Interstate.

17 to 20 - ***Tan-Tar-A, Lake of the Ozarks*: MAFP 45th Annual Meeting.** Over 20 possible CME hours offered. Contact MAFP, 8301 State Line Rd., Suite 102, Kansas City, MO 64114, 816/747-5114.

20 to 24 - ***Columbia*: 15th Annual International Society of Heart Research.** Contact Barry Kling, University of Missouri-Columbia, CME Office, MA215 Health Sciences Center, 314/882-4105.

24 to 26 - ***St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Provider Course.** 20 credit hours. Contact Mary Beth Foerstel, St. Louis University, CME Office, 314/577-5385.

25 to 27 - ***Williamsburg, VA*: Eleventh Summer Symposium in Internal Medicine.** Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

27 & 28 - ***St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course.** 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

July

6 to 10 - ***Virginia Beach, VA*: Sixteenth Annual Flap Dissection Workshop.** Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

9 & 10 - ***St. Louis*: Advanced Trauma Life Support Course.** 16 credit hours. Contact Mary Keegan, R.N., St. Louis University School of Medicine, 577-8365.

9 to 11 - ***Springfield*: ACLS Provider Course.** 18 credit hours. Call Donna Willoughby, Cox South, 417-885-4117.

10 & 11 - ***St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic.** 7 credity hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

15 to 17 - ***Nashville, TN*: First Annual Mid-South Symposium on Cardiovascular Disease.** 18.5 credit hours. Contact Registration Secretary, American College of Cardiology, 9111 Old Georgetown Rd., Bethesda, MD 20814-1699, 800/257-4739.

21 to 25 - ***Houston, TX*: 15th National Lesbian and Gay Health Conference and 11th Annual AIDS/HIV Forum.** 22 credit hours. Contact John F. Vargo, George Washington University, Office of CME, 2300 K St., NW, Washington DC, 20037, phone: 202/994-4285, fax 202-994-1791.

22 to 24 - ***Kansas City*: Workshop on Stress Echocardiography.** 13 credit hours. Contact Beth M. Paul, St. Luke's Hopsital of Kansas City, 816/932-2301, registration deadline 6/22/93.

26 to 29 - ***St. Louis*: Advanced Death Investigation Conference.** 19.5 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

31 to August 1 - ***St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course.** 16 credit hours. Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

August

2 to 5 - ***St. Louis*: Master's 5 - Advanced Death Investigation Conference.** 20.5 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

11 - ***St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Recertification Course.** 7 credit hours. Contact Mary Beth Foerstel, St. Louis University, CME Office, 314/577-8167.

14 & 15 - ***St. Louis*: Ophthalmic Microsurgery Workshop Series - Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic.** 7 credit hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

21 to 23: ***St. Louis*: Practical Anatomy Surgical Technique Workshop - Approaches to the Cranio-Cervical Fixation.** Contact the St. Louis University School of Medicine, CME Office at 314/577-8167 or 800/553-2712.

20 to 22: ***Springfield*: Advanced Cardiac Life Support Provider Course.** 22.5 credit hours. Call Linda Climer, St. John's Regional Health Center, 417/885-2648.

27 - ***Springfield*: PALS Recertification Course.** 7.5 credit hours. Call Cox South, 417/885-6111.

American Medical Association
Physicians dedicated to the health of America

For Your Benefit

AMA renews call for physician input on health care reform

During the crucial first 100 days of the Clinton Administration, the American Medical Association stepped up its involvement in the health system reform debate. AMA's goal: to ensure that patients' needs remain the focus of system reform.

The AMA organized an unprecedented two-day Washington summit, "A Time for New Partnership," on March 23-25 to encourage dialog between physicians and the Clinton Administration and Congress. Physicians from across the country gathered in Washington to hear Vice President Al Gore speak on health system reform; HHS Secretary Donna Shalala and Majority Leader George J. Mitchell (D, Maine) also addressed the physicians.

After a briefing by AMA legislative staff, the physicians visited with their representatives in Congress.

The AMA is continually working to make the voice of American physicians heard in Washington. As AMA EVP James S. Todd, MD, stated in a letter to White House senior health policy adviser Ira Magaziner, "Bring us into the process, and we can help make it work. Without the 'buy-in' of people in the front lines of health care delivery, enactment and implementation of reform will be much more difficult."

Contest boosts AMA's anti-tobacco crusade

AMA and U.S. Surgeon General Antonia Novello, MD, are sponsoring a nationwide contest to increase children's awareness of the dangers of smoking. AMA President John L. Clowe, MD, said the contest is part of the AMA's and the surgeon general's continued campaign to achieve a smokefree environment by the year 2000.

The contest is designed to combat the tobacco industry's "spending millions of dollars in advertising to encourage young children to start smoking."

AMA and the surgeon general last year sponsored a protest march in Chicago against cigarette advertising that targets children. They also demanded that R.J. Reynolds Co. drop ads featuring the company's most effective marketing tool — the cigarette-smoking Old Joe Camel that appeals to children.

The nationwide contest, called "Say No, Old Joe," is aimed at the Camel cartoon. Studies published in the December 10, 1991 JAMA showed children six years of age and older found the character just as recognizable as the Disney Channel's Mickey Mouse logo. Old Joe Camel's appeal increased smoking of that brand among children from five percent to 32 percent during a three-year period, the studies found.

"The AMA will continue its fight to eliminate underage smoking and put pressure on cigarette manufacturers who use deplorable advertising tactics to entice children to begin smoking," said Lonnie R. Bristow, MD, AMA vice chair. "Maybe Old Joe Camel has taken his last puff?"

Prepared by the Department of Communications Services. For information, call 800 AMA-3211, ext. 4416.

PHYSICIAN RECOGNITION AWARDS

The Physician Recognition Award is presented by the Missouri State Medical Association and the American Medical Association to physicians who voluntarily complete 150 hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Buchanan County

Michael D. Dunlap, *St. Joseph*
Benedict A. Moranville, *St. Joseph*

Clay-Platte County

Newton C. McCluggage, *N. Kansas City*

Cole County

Charles J. Landsbaum, *Jefferson City*

Greene County

Charles W. Dunn, *Springfield*

Metro Med of K.C.

Thomas A. Beller, *Kansas City*
Stanley N. Brand, *Kansas City*
Martin L. Crow, *Kansas City*
Michael W. Farrar, *Kansas City*
Thomas E. Geraghty, *Kansas City*
Edward Goldsich, *Kansas City*
Jerome P. Lamb, *Kansas City*
William B. Mangum, *Independence*
David L. Moore, *Kansas City*
R. Vanneman Spake, *Kansas City*

Mid-Missouri

Barry J. Bass, *Rolla*

St. Charles-Lincoln

Pedro L. Suarez-Solar, *St. Charles*

St. Louis Metropolitan

John D. Bauer, *St. Louis*
Frederick D. Bauschard, *St. Louis*
Gregg J. Berdy, *Creve Coeur*
Devera M. Elcock-Skimming, *Ballwin*
S. Robert Kovac, *St. Louis*
Bruce A. Kraemer, *St. Louis*
Kun T. Liao, *St. Louis*
Jose A. Lima, *St. Louis*
Joseph V. Otten, *St. Louis*
Ashokkumar B. Patel, *St. Louis*
David E. Perkins, *St. Louis*

West Central

William A. Turner, *Nevada*

Glenn Elected APA Fellow

Theodore J. Glenn, MD, of Cape Girardeau, recently was elected a Fellow in the American Psychiatric Association. As a newly elected Fellow, he will participate in a convocation ceremony at the annual meeting of the APA scheduled to be held May 23 in San Francisco. Criteria for election includes board certification and excellent participation in professional organizations, non-paid social service, community activities, research, education and other activities.

CORRECTION

The April 1993 issue incorrectly listed Dr. Scott Brehm as being a graduate of the University of Kentucky Medical School. Dr. Brehm completed an internship in Kentucky. He received his MD degree from the University of Oklahoma. We regret the error.

SYMPOSIUM

Total Quality Management: Improving Geriatric Care for the 21st Century

September 20-22, 1993
St. Louis University, St. Louis, Missouri

The objectives of this symposium are to (1) develop a consensus statement on priority areas for quality improvement of care of elderly persons in community, hospital, and long-term care settings and (2) evaluate methods for achieving quality improvement in those areas with emphasis on total quality management. Information will be provided by nationally and internationally known experts. For information, contact Conference Secretary, VA Medical Center, GRECC (11G-JB), St. Louis , MO 63125 or telephone FTS 280-6510 or (314) 894-6510.

ST. LOUIS VA MEDICAL CENTER
&
ST. LOUIS UNIVERSITY MEDICAL CENTER

CLASSIFIED ADVERTISING

Physicians Wanted

OB/GYN, INTERNAL MEDICINE, FAMILY PRACTICE - Strelcheck & Associates, Inc. currently represents FAMILY PRACTICE positions in Illinois, Kansas, Nebraska, Ohio, Texas, and Wisconsin - some near the Minnesota border; INTERNAL MEDICINE positions in Wisconsin; OB/GYN positions in southeastern Wisconsin. We would be happy to provide you with further information. Please call toll-free, 1-800-243-4353 or send your CV to STRELCHECK & ASSOCIATES, INC.; 10624 N. Port Washington Road; Mequon, WI 53092.

MISSOURI AND ARKANSAS MEDICAL PRACTICE OPPORTUNITIES. All specialties, no fee (to doctor), completely confidential. Many of these sites are located in scenic areas. Competitive guaranteed income, plus other benefits. Group, solo, partnership options. Contact Larson & Trent Associates, Box One, Sumner, Illinois, 62466. 800/352-6226, 618/936-2970.

DERMATOLOGY, GASTROENTEROLOGY, NEUROSURGERY, OCCUPATIONAL MEDICINE, ONCOLOGY, ORTHOPEDICS, ORTHOPEDICS-HAND, UROLOGY - Strelcheck & Associates, Inc., an extension of our clients recruiting departments, has positions available in Wisconsin and Michigan. We would be happy to provide you with further information. Please call 1-800-243-4353 or send your CV to STRELCHECK & ASSOCIATES, INC.; 10624 N. Port Washington Road; Mequon, WI 53092.

OCCUPATIONAL MEDICINE PHYSICIAN A rapidly expanding hospital based Occupational Medicine program in south St. Louis County is seeking two physicians for immediate employment. OM certification is preferred but not required. The position offers excellent working conditions, hours, salary and benefits. Please send CV or call: Linda Roarty, R.N., Program Coordinator, St. Anthony's Medical Center, 10010 Kennerly Road, St. Louis, MO 63128, 314/525-4280.

PRIMARY CARE PHYSICIANS wanted to practice Occupational Medicine in freestanding clinics in the greater Kansas City area. 40 hour week, Monday-Friday. No call or hospital work. Kansas and Missouri license required. Send CV to: Eugene S. Welter, MD, 8511 Hillcrest Rd., Suite 320, Kansas City, MO 64138.

RADIATION ONCOLOGIST - board certified, 20 years private practice experience, Missouri and Oklahoma medical licenses, wants to do 1-3 week locum tenens, starting October 1993. (918) 627-8157, P.O. Box 471767, Tulsa, OK 74147-1767.

INTERNAL MEDICINE - A vacancy exists for a Board Certified Internist to serve as Chief of Medicine Service at the Poplar Bluff, MO VA Medical Center. The Poplar Bluff, MO VA Medical Center is dedicated to providing quality patient care. We are presently recruiting for the right physician to join our dedicated staff. We are committed to insuring our Veterans receive the BEST QUALITY of care available. Dr. Rolin Duncan, Chief of Staff, would like to discuss the advantages of working at this Medical Center with a dedicated staff who are as committed to providing the same quality patient care as you. WON'T YOU TAKE SOME TIME TO TALK WITH US, LEARN MORE ABOUT WHAT THE DEPARTMENT OF VETERANS AFFAIRS CAN OFFER IN THE WAY OF SALARY - BENEFITS - QUALITY OF LIFE. Please call Dr. Duncan to find our more about this great opportunity. You may reach him at (314)686-4151, extension 201. If you would like to give us serious consideration, we would be happy to provide you a complete application packet. JOHN J. PERSHING VA MEDICAL CENTER, 1500 N. Westwood Blvd., Poplar Bluff, MO 63901 An Equal Opportunity Employer.

OB/GYN Female seeks BE/BC partner for growing Midwest practice. Young medical staff at hospital with MRI, CT, ultrasound, laparoscopy, laser, YAG, centralized monitoring unit. Family community with stable economy, low crime, excellent public schools, lake, golf. Send CV to Barb Inselman, 10983 Granada #202, Overland Park, KS 66211 or call 1-800-533-0525.

PHYSICIANS AND THEIR FAMILIES WORKSHOP

July 25 - 30, 1993

Location:
Grand Butte Hotel
Crested Butte, Colorado

Credit:
24 (ACCME)
24.5 (AAFP)

Contact:
The Menninger Clinic
Topeka, Kansas
800/288-7377.

INFORMATION FOR CONTRIBUTORS

Articles are accepted for publication on condition that they are contributed solely to this journal. Material appearing in *MISSOURI MEDICINE* is protected by copyright.

Manuscripts should be submitted to the editor, **J. Regan Thomas, MD,** P.O. Box 1028, 113 Madison, Jefferson City, MO 65102. The transmittal letter should designate one author as correspondent and include his or her address and telephone number.

In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: **"In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA."** We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

Manuscripts

Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on floppy disks or diskette using WordPerfect 5.1 or other compatible wordprocessing.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

Illustrations

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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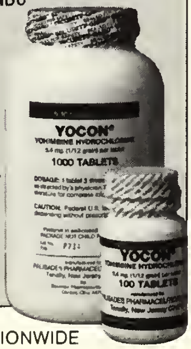

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PRAVACHOL® (Pravastatin Sodium Tablets)

CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and lactation. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials ($<0.1\%$). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin.* See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine: The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin*, *antacids* (1 hour prior to PRAVACHOL), *cimetidine*, *nicotinic acid*, or *probucol*, no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p<0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p<0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p<0.05$). The incidence was not dose-related and male mice were not affected

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells, a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area ($mg/meter^2$). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated, adverse reactions have usually been mild and transient In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions: An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting.

Reproductive: gynecomastia, loss of libido, erectile dysfunction.

Eye: progression of cataracts (lens opacities), ophthalmoplegia

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended (See WARNINGS **Skeletal Muscle** and PRECAUTIONS **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

(J4-422A)

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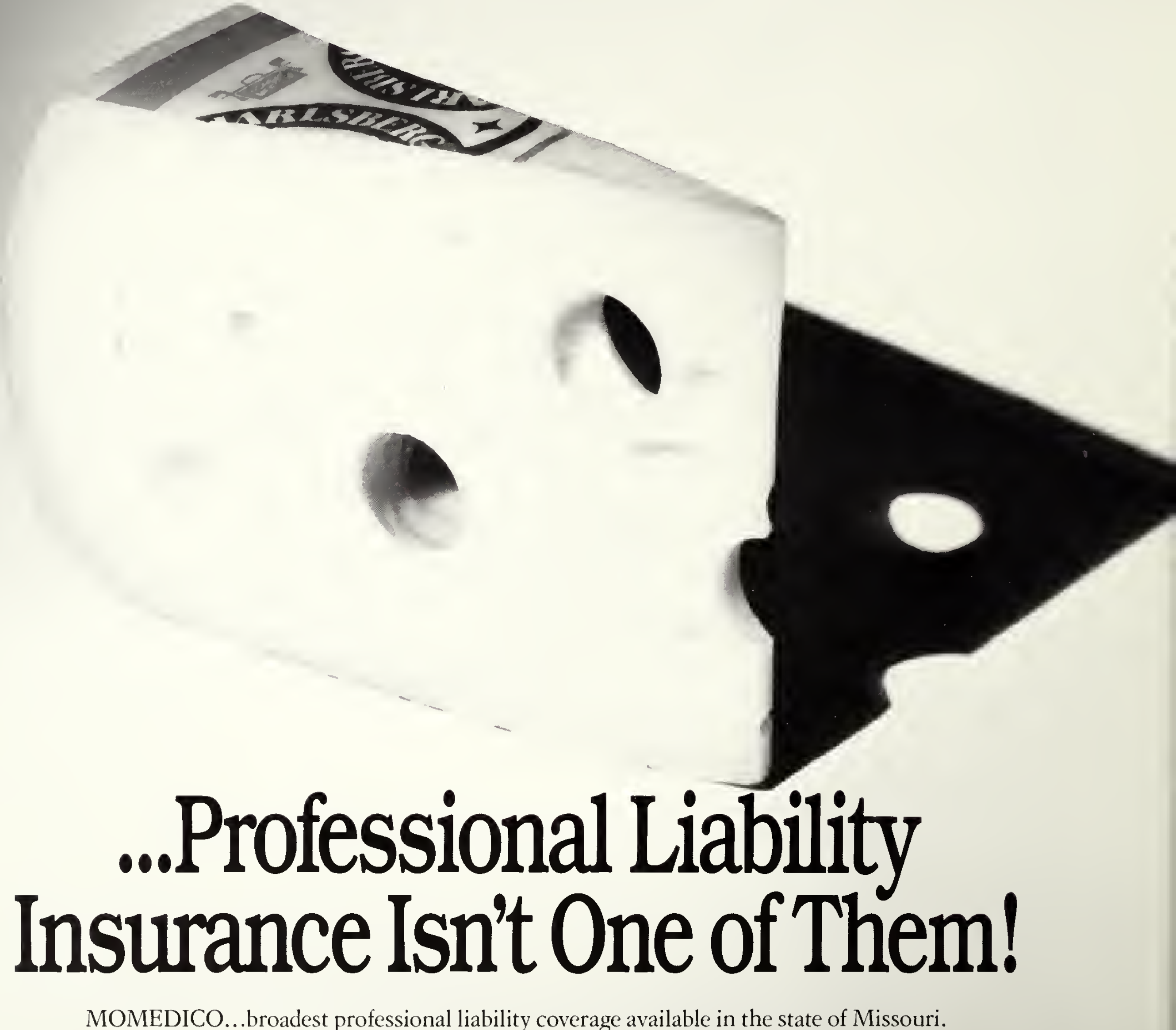

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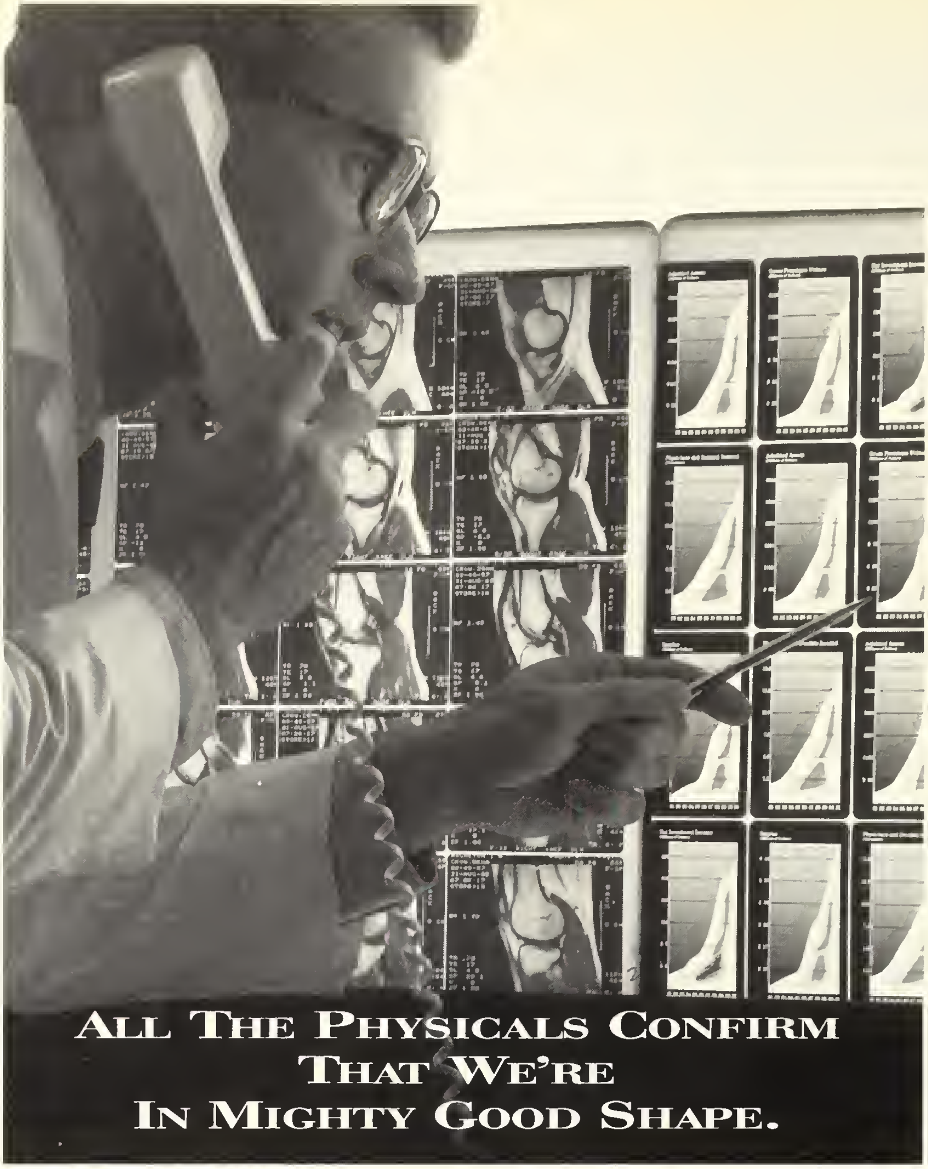

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John J. McNamara, MD, is a retired radiologist in St. Louis. He was director of radiology at St. Mary's Health Center and is an associate clinical professor at St. Louis University. He took this photograph of a stream just below Big Spring which is south of Van Buren, Missouri, in the Ozark National Scenic Riverway.

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Protect Our Children

J. Regan Thomas, MD, Editor

In the first nine months of 1992, 45 children died in Missouri from abuse or neglect. That is almost twice the rate from 1989 when 25 children died. There are states with worse records than Missouri creating a shocking, shameful national crisis.

This statistic was released in a report from Dr. Coleen Kivlahan, director of the Missouri Department of Health, revealing the findings of the Missouri Child Fatality Review Project. The project was in response to a call from the legislature to provide a county by county assessment of deaths in children. This new system went into effect in January 1992 and is now reported to be one of the most comprehensive in the nation. Missouri is now the first state to have child fatality review panels in place in every county. A significant step was to secure Medicaid funding for autopsies of poor children.

The findings outline some distressing facts. For example, the adult most likely to be implicated in abuse or neglect related deaths is a parent of the child. Homicide is the most frequent cause of injury deaths for infants and second only to motor vehicle accident deaths in children under 15 years of age.

Importantly, several specific trends were identified that can help target specific strategies for prevention. These tragedies are more likely if the children are poor, the children of parents without a high school education, or in homes where there is drug and alcohol abuse. Forty-one percent of the deaths occurred when the children were not supervised by an adult or were being supervised by other children. As in so many of our societal problems the causative factors are not random interspersed events, but rather are intermeshed with other identifiable difficulties and dilemmas of our era. Improved education, enhanced economic opportunities, and strengthened family values and support systems are inexorable components of the solution.

It is the most fundamental tenet of any civilized group: we must protect our children. No other group is more vulnerable to society's neglect or ambivalence than children. As physicians we must be vehement and unrelenting in our insistence that this affront to civilized behavior must be corrected.

Face Challenge with Faith

Melvin C. Kasten, MD, MSMA President

I would first like to express appreciation to Dr. Carol Williams. I admire her commitment to the association. She has served us well and I will try to continue her effort to better medical care.

It is an honor and a challenge to be your president. Especially this year as we face the possiblity of tremendous changes in medicine.

To meet the upcoming challenge of change we must affect medicine collectively and cooperatively. Our membership must be actively involved in political processes by having direct contact with elected officials. It is important that we make sure they are informed.

We must also as physicians make a concentrated effort to communicate completely with our patients. They should be included in the making of decisions that will affect their lives. They can be the best defenders of quality medicine if we will take the responsibility to help them understand health care and the messages that they are receiving from media.

Furthermore, we must be the ones to look at all facets involved in today's health care, including hospitals, medical schools and the community. Where changes need to be made we should make a courageous commitment to make improvement.

To help us accomplish our tasks, I suggest that we look for divine guidance such is given in the prayer made by Rev. Launhardt at the inauguration of my presidency:

Father in Heaven, as You have given many gifts of caring and healing to those present, and as You have blessed the Missouri State Medical Association with 135 years of service; we come before You now in this Inaugural ceremony asking for Your Presence and Your Blessings.

We do thank You for the 42 years of service in the medical profession of our incoming President, Dr. Melvin C. Kasten. Thank You for the power and inspiration of this convention - for all that it has meant to each one of us as we have grown in our sensitivity to the healing arts and the ability to carry out a mission of concern and help to people.

Thank You for the special gift to all of us in the role of our leaders, who through their initiative have stimulated us, giving us an increased growing knowledge of serving mankind and touching the human needs in our communities. Especially we thank You for Dr. Melvin Kasten as he is before us as the President-Elect to serve our goals for the next year.

We also thank You for Dr. Carol Williams, who has served during this last year. May the benefit of her efforts continue to be a gift to our organization.

We ask You to give Your blessings on the presidency of Dr. Kasten in order that all which we do together will be to Your glory and to the furtherance of service to human need and health. We particularly ask You to give guidance to the MSMA in these trying times of governmental change and control in health care. Grant that a wise path might be fashioned through the challenges which lie ahead.

Continue to motivate us by that love which Christ has given to us in His supreme sacrifice on the cross, which we particularly remember on this Palm Sunday evening, and give us the same hope in the face of difficulty which we have seen demonstrated in the resurrection of Jesus as we return home to carry out the commitment to our profession and to the people we serve. We ask in Jesus name. Amen.

Rev. Louis Launhardt

Dear Dr. Woerth,

We are uncertain as to when we can use V codes as a diagnosis code for Medicare. We have heard that Medicare will not accept some V codes. Could you explain when and how to use V codes?
M.P.

Dear M.P.,

I often hear from my clients that Medicare will not reimburse for services rendered when V codes are used as the diagnosis. This is not accurate. Medicare will pay when V codes are used as diagnostic codes, however, the V codes must be used appropriately.

The ECD-9-CM V codes address circumstances other than injury, illness, or disease. They are to be used for patients who 1) seek health services for preventive medicine, like a vaccination or follow-up after treatment, 2) seek treatment for a disease or injury like renal dialysis or a cast change, and/or 3) have circumstances or problems that affect their health status like a history of cancer or have an artificial opening.

Some of the V codes are for "routine" care which Medicare interprets as preventive care. Because Medicare does not pay for preventive medicine, it does not reimburse for services rendered when these V codes are used as the primary or #1 diagnosis on the HCFA 1500 claim form. The following list includes those V codes that Medicare considers "routine" when used as the primary diagnosis and a brief explanation of the reason.

V03.0-V06.9	These codes are for prophylactic (or preventive) vaccinations.
V16.0-V19.9	These codes are for family history of specific diseases. To seek medical care for a family history of a disease without any symptoms would be preventive in nature. These codes are excellent supplemental information when the patient has the symptoms of the family disease.
V20.0-V21.9	These codes are for supervision of a healthy baby or child. Such visits are preventive in nature.
V25.01-V25.2 V25.01-V25.9	All are preventive services related to conception.
V26.0-V26.9	Procreative management is not covered by Medicare.
V30-V39	Live born infant care is not covered by Medicare.
V50.0-V50.9	These codes are for elective surgery for services Medicare does not cover.
V52.3-V52.4	Medicare does not reimburse for dental or breast prostheses.
V57.4	Medicare does not pay for orthoptic training.
V59.0-V59.2 V59.5-V59.9	Medicare does not reimburse for services related to these donors.
V60-V65.9 V68.0-V68.	These codes represent secondary reasons for seeking health care and without a primary diagnosis of some disease or illness are not allowed for Medicare reimbursement.
V66.0-V66.9	Medicare does not pay for convalescence.
V70.0-V70.9 V72.0-V72.3	These codes are for health examination in which patients are not sick. They are preventive in nature. Medicare will reimburse for a pap smear lab test every three years.
V72.5-V82.9	These are all screening codes and without symptoms would indicate preventive medicine.

Codes V71.0-V71.8, observation and evaluation for suspected condition, are other codes that should not be used as the primary diagnosis. The "includes" note listed under category V71 indicates that the patient being seen for observation and evaluation of a suspected condition presents with some symptoms or abnormal conditions. These symptoms or abnormal conditions should be listed as the primary diagnosis with the V71 code listed second as shown below:

1. 427.9 Cardiac arrhythmia
2. V71.7 Observation and evaluation for suspected cardiovascular disease.

Now let us examine some of the V codes that can be used as primary diagnosis. The codes V67.0-V67.6 for follow-up examinations can be the #1 or primary diagnoses on a HCFA 1500 form. The specific codes most often reimbursed by Medicare are the original service performed (the surgery or radiotherapy) was considered medically necessary by Medicare. When possible, these codes should be accompanied by a second V codes that examples the reason for the surgery, chemotherapy, etc.. For example:

1. V67.0 Follow-up exam following surgery.
2. V10.04 Personal history of malignant neoplasm of the stomach.

Codes V42.0-V44.0 which represent organs or tissues replaced by transplant or other means and artificial openings can be listed for Medicare patients as the primary

Continued on page 270

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Continued from page 269

reason for seeking medical care. Even though the patient may not be having a problem with the transplant, replacement, or artificial opening, Medicare recognizes that these need to be periodically examined and will pay for the office visit related to these services.

When using V codes, as with all diagnostic coding, it is important to read the "includes" and "excludes" notes to ensure that the codes are being properly used.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

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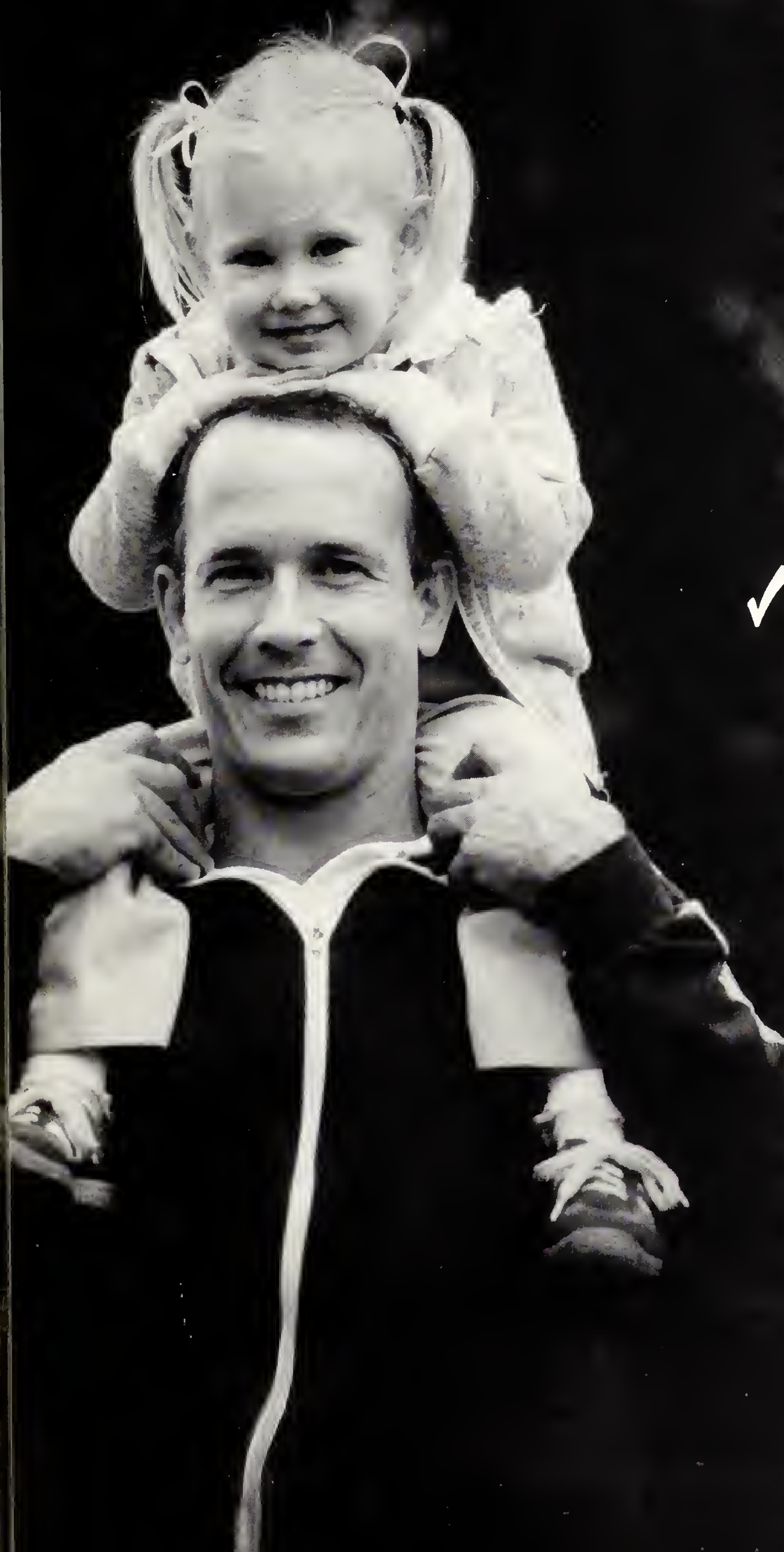

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MONETAMED PROFILE

THOMAS P. DOYLE, M.D.

HOME: St. Louis, Missouri

AGE: 36.

SPECIALTY: Orthopedic Surgery.

MEDICAL COLLEGE: University of Missouri, 1978

PRACTICE: "I recently purchased an established but declining sole practitioner office from a retiring physician. It's a risk, but they say that great deeds are usually wrought at great risk."

HOBBIES: Horseback riding and golf. "If I combined activities, would it be polo?"

LAST BOOK READ: Missouri: Images of Nature, photographed by Charles Gurche.

LATEST ACCOMPLISHMENT: "Testing a protective knee pad I'm developing for use by football players."

PROFILE: Independent and open-minded. "Living in the country, I don't feel hampered by social convention. I can work on new ways of doing things."

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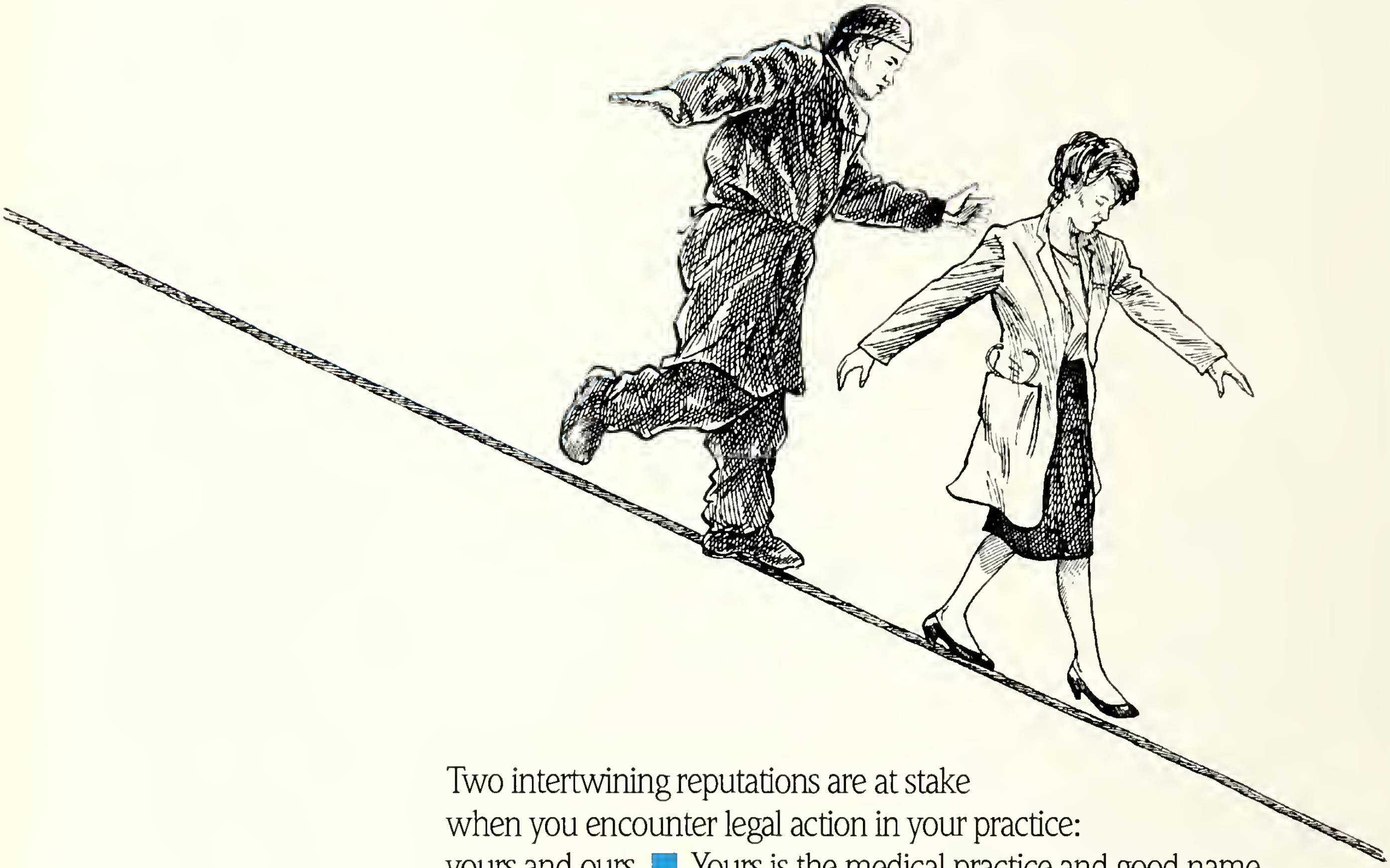

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Dermatology Quiz #5

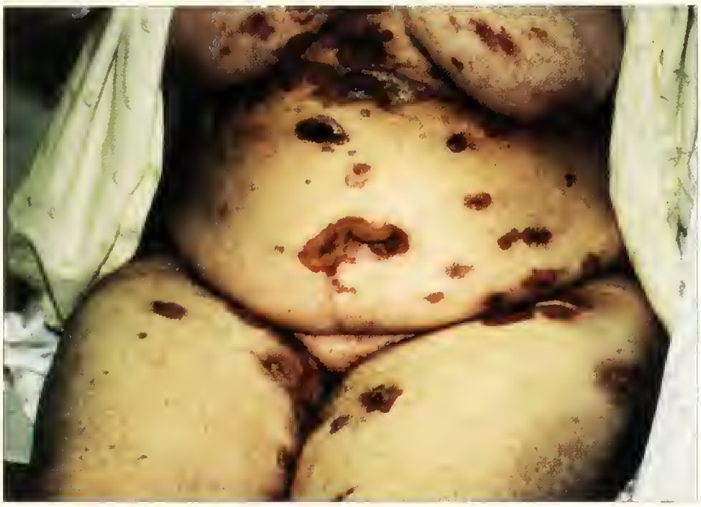

Figure 1

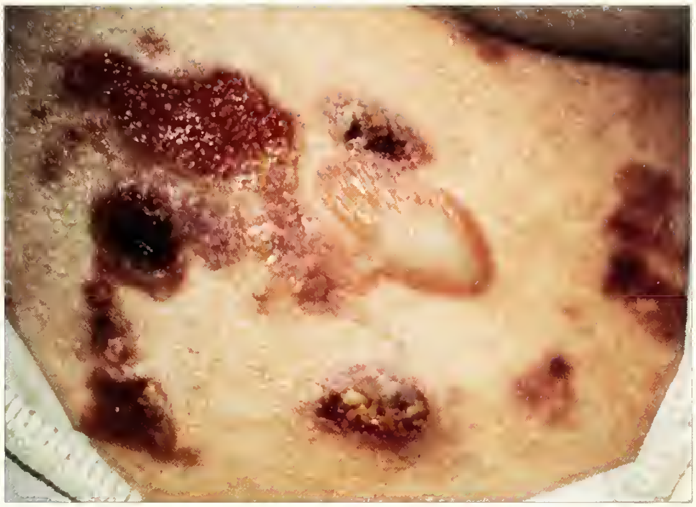

Figure 2

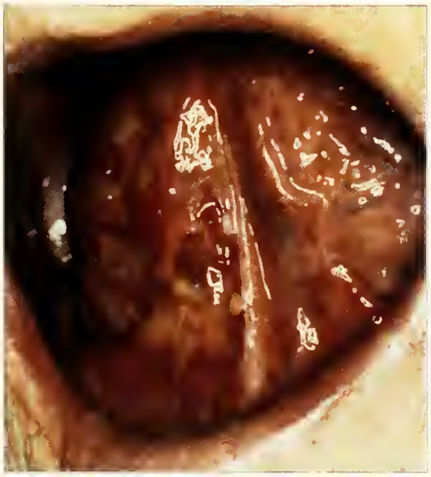

Figure 3

Mrs. K is a 65-year-old white woman with a six week history of "blister" on her hands and body, unresponsive to oral antibiotics. In addition, ulcers had recently developed in her mouth. Past medical history was noncontributory and she was on no medication.

Physical examination (Figures 1 and 2) revealed large areas of denuded skin, numerous intact tense bullae and erythematous urticaria like patches involving the intertriginous and flexural areas. Superficial erosions were present on the ventral aspect of her tongue (Figure 3) and soft palate.

1. The history and physical examination of this patient most likely represents a diagnosis of:

   a) Bullous impetigo b) Bullous pemphigoid c) Toxic epidermal necrolysis
   d) Pemphigus vulgaris e) Bullous lupus erythematosus

2. The most helpful laboratory test to aid in your diagnosis would be:

   a) Blood cultures b) Gram stain and culture of a bullous lesion c) FANA
   d) Skin biopsy with direct immunofluorescence

(See Answer on next page)

DERMATOLOGY QUIZ ANSWER

(Dermatology Quiz Question is on previous page.)

Answers:
1. b) Bullous pemphigoid
2. d) Skin biopsy with direct immunofluorescence

Bullous pemphigoid is a non-scarring blistering disease of the elderly having its greatest frequency in the 6th, 7th, and 8th decades of life. However, bullous pemphigoid has been reported in all age groups including children.

Diagnosis is made on clinical and histological findings. Clinically, the blisters of bullous pemphigoid are large, tense bullae and commonly involve the groin, axilla and flexural areas. The bullae may arise on normal appearing skin or on erythematous urticarial patches. Mucous membrane involvement occurs in less then 20% of the patients. Skin biopsy classically reveals a subepidermal cleft with a dermal infiltrate of eosinophils, neutrophils and histiocytes. Direct immunofluorescence will show IgG and C_3 deposition in a linear array at the dermal-epidermal junction. In approximately 70% of bullous pemphigoid patients, circulating antibasement membrane antibodies may be detected by indirect immunofluorescence. However, these levels do not correlate directly with disease activity.

The differential diagnosis of blistering disorders would include the above mentioned choices in addition to epidermolysis bullosa acquisita and dermatitis herpetiformis. Bullous impetigo usually occurs in infants and young children and the cleavage plane of the bullae will be in the uppermost epidermis. Patients with toxic epidermal necrolysis are systemically ill, have extensive mucous membrane involvement, and large flaccid bullae. A subepidermal blister will be seen as in bullous pemphigoid, however, extensive necrosis of the epidermal cells will usually be present in TEN. Pemphigus vulgaris, like bullous pemphigoid, may be seen in the elderly, but generally occurs in the 4th and 5th decades of life. The bullae are flaccid, break easily leaving large denuded areas and are rarely seen intact on a clinical exam. Oral lesions are very common and may be the presenting feature. Biopsy will reveal the cleavage plane at the suprabasilar level. Bullous SLE, a rare manifestation of SLE, may clinically mimic bullous pemphigoid. However, these patients usually have other signs and symptoms suggestive of SLE. Again, skin biopsy with immunofluorescence along with other laboratory findings and clinical presentation will aid in differentiating these diseases from bullous pemphigoid.

Steroids are the mainstay of treatment in bullous pemphigoid. Initial doses of 1 mg/kg of prednisone daily may be required to suppress the formation of new bullae. In addition to corticosteroids, immunosuppressive agents such as azathioprine and cyclophosphamide may be required in some cases. Topical care including wet dressings, antibiotic ointments and potent topical steroids may be helpful in localized bullous pemphigoid. Although the mortality rate is low even in the absence of treatment, bullous pemphigoid can be a serious disease in debilitated or elderly patients. However, spontaneous remissions frequently occur and prolonged clinical remissions are the usual outcome of successful therapy.

Our patient required hospital admission because of the large body surface area involved. Eighty mg of prednisone daily was administered until there was no new bullae formation. Prednisone was slowly tapered over the next two months and the addition of azathioprine was required to control her disease. Secondary to an increase in liver function test, azathioprine had to be discontinued after one month. She remained on low doses of prednisone for the next six months and is currently on a topical regimen alone with good control.

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2. Lever, Walter, Lever, G. *Histopathology of the skin*, Seventh edition, Chapter 7, copyright 1990, J.B. Lippiniott Co.

Submitted by **Miriam Shatley, MD**, a resident physician at the University of Missouri in the division of Dermatology.
The Dermatology Quiz is coordinated by **Kent D. Walker**, MD, University of Missouri Hospital & Clinics, Department of Dermatology, One Hospital Drive, M173, Columbia, Missouri 65212.
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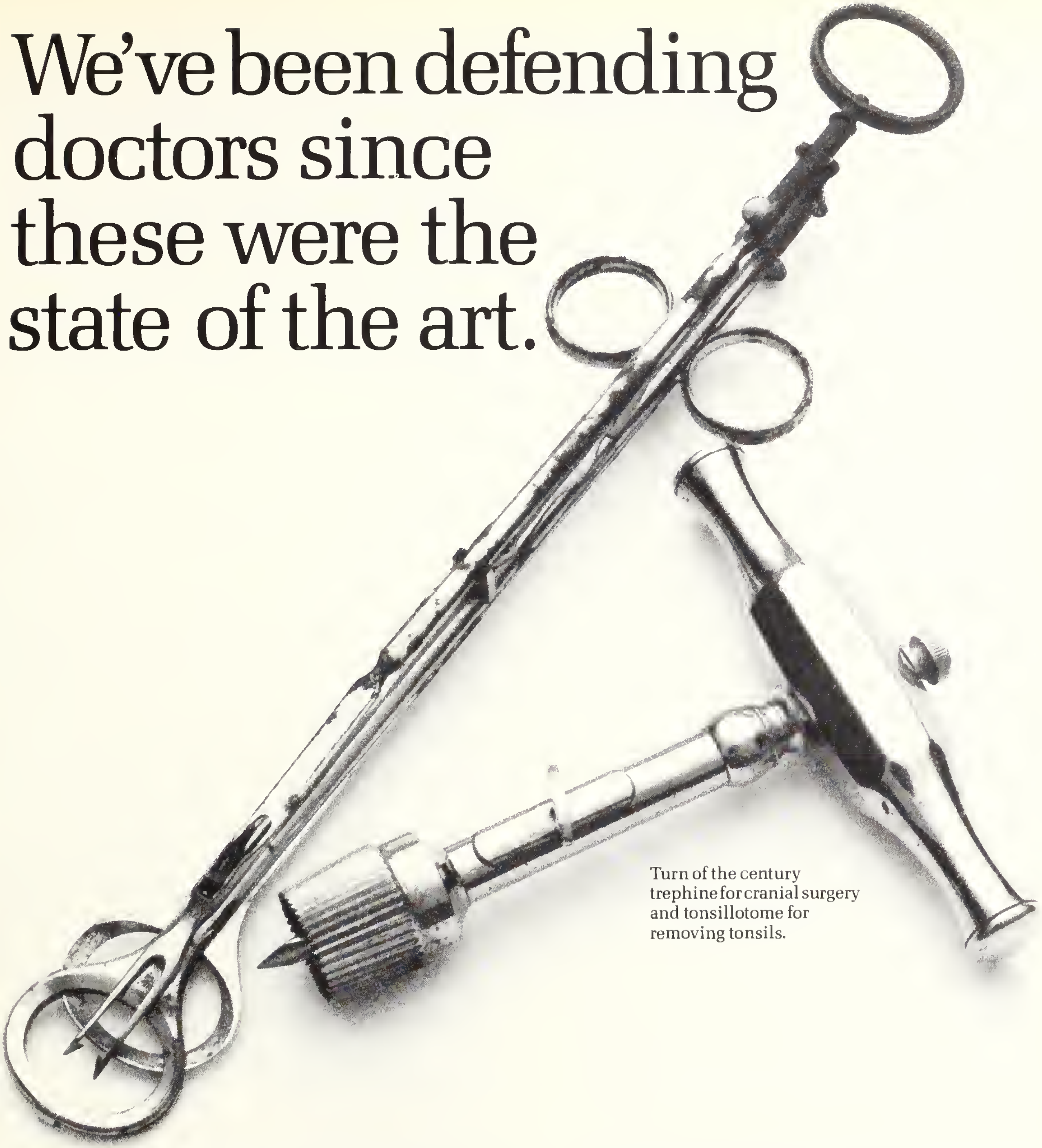

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Presidential Acceptance Speech

Betty Huffaker, MSMAA President

It has been said that "each new season grows from the leftovers from the past. That is the essence of change, and change is the basic law." (Hal Borland)

President Clinton is bringing this fact home to us very clearly. In his inaugural speech, he stressed over and over again that we are in a season of renewal. Change must be made a friend, for we are in a new era of change.

Change can be wonderful with new ideas and a fresh way of doing things and viewing life. Change can also be frightening - leading to a loss of what we know and a way of doing things that we are comfortable with and a loss of our security.

We are entering a time of both promise and problems for the medical community, sort of the best of times and the worst of times. We don't know for sure what form that change is going to take and how it will affect physicians as a profession in the hospitals or clinics or private practices in which they work. Whether private practice will even continue to exist as we now know it is uncertain. One thing that we do know, is that change is coming.

As John F. Kennedy once said, "change is the law of life. And those who look only to the past or the present are certain to miss the future." Whatever happens, publicly and privately, your role as a physician spouse will continue to be very important and necessary.

In the national public arena, the 103rd congress is already diligently at work. We have new faces, new agendas, and a new president who within a week of taking office, announced an interagency task force on health system reform headed by his wife Hillary Rodham Clinton . . . yes, his spouse! Do you think that he's serious about health care reform? Very definitely! Only a spouse would dare to tell the President what to do. He knew the way to get things done was to put his spouse in charge and in charge she is.

The sole reason for the existence of the health-care community, our physicians, is to care for the health and well-being of their patients and the community in which they live. Yet, not one practicing physician was invited to be a part of this task force. Not one member from the health care provider community. Not even a member representing patients, who this task force is supposed to be talking about. You can believe that there were lawyers present and representatives from the business community.

Dr. Scalettar, chairman of the AMA Board of Trustees, when speaking to the MSMA Council at the State Convention did announce that through the pressure of the AMA they have finally been able to meet privately with members of this task force four times. So, there is hope.

Yet, this makes me wonder just what is this task force's number one priority? Are they concerned about the wellness of the American public or are they more concerned about the "wellness" of the dollar?

We are starting to get leaks about what will be proposed. Managed competition is one thing. But do they really understand the ramifications of this? Global budgets is another. Now this would put a fiscal cap on what monies are available to take care of sick patients. This sounds to be ideal for them, but can one put a "cap" on illness? No!

We live in a society with an increasing aging population, costly new technology, inflation, and a population with a tendency for "self-abusive lifestyles" and we know that this leads to spiraling health care expenditures. Rather than acknowledge this fact, some public servants prefer to blame physicians for runaway costs.

Let us take a look at some of these contributing cost factors. Doctors are not to blame for Medicare's financial problems. Indeed, the rate of growth in expenditures for physicians' services has declined substantially in the past few years. Of course, the overall cost of the Medicare program is escalating. Approximately 500,000 new enrollees are added every year, and the percentage of those who seek care rose 28% in the past ten years. The total number of visits to physicians by patients over 65 is increasing. In addition, the 85-and-over population has expanded by almost a million in the past nine years. This is not bad news to a physician. Indeed, this is a testimony to the quality of medical care received by our senior citizens.

Nevertheless, critics continue to blast America's medical care system because the U.S. "ranks 16th in the world in life expectancy and 17th in infant mortality." But I think it should come as no surprise that a huge heterogeneous nation such as ours would rank so low in these categories. In so far as infant mortality rates are concerned, they are more a reflection of reporting mechanisms, teen pregnancies, poverty, and drug and alcohol abuse, than they are of the quality of our health-care system.

These same critics claim that U.S. health care is not superior to that in other countries. If this is true, perhaps they can explain why patients travel to the United States from all over the world to receive prompt, high-quality medical care. American hospitals bordering Canada will attest to this as they continue to service an increasing Canadian clientele.

It is true that life expectancy in the United States is below that in a "few" other countries. I feel this can not be blamed on our health-care system. Much of the fault lies again with our affluent, self-abusive lifestyle. Robert Blank, author of *Rationing Medicine*, says that approximately 80% of illnesses can be linked to smoking, alcohol consumption, illicit drug use, poor diet, obesity or sexual promiscuity. He goes on to say that 4% of the people in the United States account for 55% of all hospital costs. But our government has paid little heed to the wise adage, "an ounce of prevention is worth a pound of cure." In fact, less than 1% of our national health-care dollar goes for health education and promotion. Paying more attention to prevention can have a huge effect on health-care costs.

There is no question that health-care costs are higher than they should be, and that they will continue to rise. But why blame physicians for this problem? Inflation has affected health-care just as it has affected every other commodity. With 3 million desperate drug abusers at large on our streets; 55 million tobacco abusers causing 1,000 costly, painful deaths every day; and nearly 1 million new cases of venereal disease adding to our society's existing health-care burden, can we not expect rising health-care costs? But that's not all. There is a growing crisis involving long-term care, homelessness, Alzheimer's Disease, and add the 37 million uninsured and underinsured working poor, plus the burgeoning crisis of over a million men, women, and children infected with the AIDS virus, you'd have to be blind not to recognize a simple fact: our self-destructive lifestyles are one of the biggest problems with our health-care system.

I wonder who will be courageous enough to tell the truth to the American public, that we must either spend more for the damage already done, or pay the piper by rationing the quantity and possibly reducing the quality of our health-care?

Our administration seems to be blind to some simple facts. If you add 37 million more individuals to the health-care system, there is a cost. The cost will either be monetary, or the cost will be in reduction of services.

To quote President Clinton, "there is nothing wrong in America that can not be changed by what is right in America." Well, I say that there is a lot "right" with this the best health-care system in the world.

The AMA has been encouraging health system reform for many years. It's comforting to know that the new administration understands how important this is to the average American. But it is not good if the public or our public servants think that all that is wrong with the health-care system is the cost. You hear more and more about costs and less and less about patients. Cost must not be the controlling force in reform.

We, as members of the medical community, must see to it that "financial considerations" do not replace "medical concerns." We must assure that attention to the bottom line doesn't replace appropriate care. We must insure that the "battle for balanced" budgets doesn't tip the scales away from the quality care which our spouses want to provide . . . and DO provide!

This is why it is imperative in this year of change, that physicians and their spouses continue to stand up as advocates for what is best for their patients. If "we" don't, it's the patient who will be caught in the middle.

Dr. James Todd, Executive Vice President of the AMA, sees the major role of the Alliance in the health-system reform and that of the AMA is to help make sure "that pressure to provide what fiscal planners want, does not distract the policy makers from what our patients need". As physician spouses we know first hand that physicians have always been the patients' advocate.

Long before reform became the rallying cry for politicians, long before any of this, the AMA and the Alliance were out in front with their own plan for change. Three years ago, the AMA introduced "Health Access America." This was the "first large-scale attack on the status quo by any major professional or political organization in the country." This plan "does not propose a new national system, but a set of new national solutions."

Here is where we as Alliance members can be most influential and what we can do to help. We must become informed. Read the issues and bills that are coming before our legislature. The AMA recognizes us as "the force behind one of the most effective, efficient, grassroots political activists in the nation." We are in a perfect position to tell our legislators and the public which we interact with daily, about the types of changes that have to occur in this country. We are long past the point where we can just be reactive. The time has come when we must take the pro-active role and work to effect change so it doesn't engulf us.

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Dr. Todd wants the Alliance to be aware that there are three things that we must guard from losing:

1. Physicians must retain the freedom, the autonomy, to make their own clinical decisions, (not some high-schooler sitting behind a phone) and they must regain the freedom and autonomy to regulate their own profession.

2. Physicians have a right to expect reasonable compensation for what they do. They aren't the ones responsible for the high cost of medical care. To me, society must begin to take responsibility for it's own shortcomings, i.e. the problems associated with violence, drugs, poverty, and our own self-destructive nature. (Those of us who were married during those medical school days know the sacrifices the families of physicians always have made.)

3. There must be relief for doctors and patients alike from the hassles and unnecessary regulations that are engulfing them, strangling them in paperwork, etc. And there are very few who haven't felt the weight of depression that sets in when the physician is slapped with a "frivolous" law suit. There is no such thing as frivolous. The emotional toll upon the physician and family is horrendous!

We spouses know better than anyone, the frustrations doctors face, and the number of physicians who just want out. This is not just sad, this is tragic! We are losing the best minds and the most compassionate individuals that I know.

This year my focus will be on education and trying to keep our membership aware of the changes that will be coming and coming fast. This does not mean that we will not be addressing the problem of our declining membership and trying to bolster our numbers. This does not mean that we will not still be involved in community and health related activities, for we shall. But in education comes knowledge. And with knowledge comes power, power to help direct and shape the future of medicine.

In serving, we recognize a valuable truth, that we need each other... all working together. As you look around here, you will see that everyone here has answered the call to change. That doesn't mean that change won't leave you feeling insecure. That doesn't mean that change won't leave your spouses feeling insecure. It just means that they'll need your support and understanding even more.

Change is always difficult, even a change for the good. So when you leave today, remain committed to the mission that you and your spouse have undertaken together and remember, yesterday is a memory. Tomorrow is yet a dream. So seize the day! Today is a new day. Today is a good day. Today is a new beginning. Thank you!

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Preventable Mortality in Missouri: Excess Deaths from Nine Chronic Diseases, 1979-1991

Sharon Hoffarth, MD, MPH; Ross C. Brownson, PhD; Bruce B. Gibson, BS;
Donald J. Sharp, MD; Wayne Schramm, MS; Coleen Kivlahan, MD, MSPH

For the period 1979-1991, 54% of the 644,045 deaths in Missouri were attributed to nine chronic diseases--cancers of the breast, uterine cervix, lung, colon/rectum; coronary heart disease; stroke; diabetes; chronic obstructive pulmonary disease; hepatic diseases/cirrhosis. Elimination of risk factors and screening have been shown to reduce the mortality caused by these diseases. To evaluate the range in excess mortality in the state, we calculated excess mortality by county and correlated these rates with three sociodemographic variables. Based on these analyses, an estimated 100,000 deaths may have been prevented through prevention and early detection activities.

Since 1900, the major causes of death in the United States have shifted from infectious diseases, such as pneumonia and tuberculosis, to chronic diseases, such as coronary heart disease and cancer.[1] This shift has produced a predominance of diseases with protracted courses that generate substantial health care expenses and lost productivity. More important, however, is that much of the morbidity and mortality from chronic diseases can be reduced or eliminated through risk factor reduction and early detection.[2]

Using this premise, Hahn et al[3] examined differences in state mortality rates for nine chronic diseases (breast cancer, uterine cervical cancer, lung cancer, colorectal cancer, coronary heart disease, stroke, diabetes, chronic obstructive pulmonary disease [COPD], and hepatic disease/cirrhosis) in the United States and calculated excess (preventable) mortality based on the lowest rates for each disease.

To determine excess mortality in Missouri and to examine associated sociodemographic variables, we recently conducted a similar study of mortality by Missouri county for the same nine chronic diseases.

METHODS

The Missouri Center for Health Statistics (MCHS) compiled data from death certificates for the period 1979 through 1991. MCHS calculated average annual age-adjusted death rates for each of 115 Missouri counties for all nine chronic diseases under study. The 1940 U.S. population was used as a standard. Combined mortality rates for the target diseases were also calculated for each county. The lowest mortality rate was defined as the minimum achievable rate for a specific disease, and all rates that exceeded this minimum were considered to represent excess mortality from that disease.

To further evaluate the patterns of mortality across the state, age-adjusted aggregate mortality rates for all other causes of death (such as infectious diseases and injuries) and for causes listed as "ill-defined" were also calculated for each county.

We used the Pearson correlation coefficient to evaluate the relationships between integer values of the nine causes of death and three county-specific sociodemographic variables: 1) the percentage of each county's population living in urban areas; 2) the percentage of each county's population with incomes below the federal poverty level; and 3) the percentage of adult residents who were high school graduates.[4] Correlation analysis was also used to compare the categorical distribution of primary-care physicians with the combined mortality rates (based on the September 27, 1991 Federal Register of Primary-Care Health Professional Shortage Areas[5]).

RESULTS

The highest and lowest county mortality rates for each of the nine chronic diseases under study, for the nine combined target diseases, and for the categories of "ill-defined" and "other specified" causes were calculated

TABLE 1

Highest and Lowest Age-Adjusted[*] Mortality Rates for Missouri Counties, 1979-1991.

No. of Deaths	Disease	Highest County	Highest Rate[⋆]	Lowest County	Lowest Rate[⋆]
189,813	Coronary heart disease	St. Louis City	199	Schuyler	75
50,416	Stroke	Pemiscot	62	Madison	20
10,947	Diabetes	Madison	18	Scotland	2[+]
11,570	Breast cancer	Ripley	33	Shannon	6[+]
1,382	Cervical cancer	Washington	7	Cooper	0.2[+]
17,398	Colorectal cancer	Schuyler	20	Gentry	9
23,515	COPD	Audrain	30	Scotland	9[+]
39,203	Lung cancer	Wayne	56	Knox	19
5,588	Hepatic disease	St. Louis City	15	Macon	2[+]
349,832	Combined nine target causes	St. Louis City	379	Clark	200
17,049	Ill-defined causes	Carter	121	Schuyler	2[+]
277,164	Other specified causes	St. Louis City	366	Cape Girardeau	209

[*] The 1940 U.S. population is used as the age-adjustment standard.

[⋆] Expressed as deaths per 100,000 population.

[+] Based on fewer than 20 deaths.

(Table 1). St. Louis City had the highest age-adjusted death rate for both coronary heart disease and hepatic disease/cirrhosis. St. Louis City also had the second highest rate for diabetes and the third highest rates for both lung cancer and colorectal cancer. The highest rates for stroke, diabetes, breast cancer, cervical cancer, and lung cancer were in counties clustered in southeastern Missouri. Three of these southeastern counties--Mississippi, Pemiscot, and Washington--each appeared three times among the three highest rates listed for each target disease. Schuyler and Audrain Counties, in northeastern Missouri, had the highest rates for colorectal cancer and COPD, respectively.

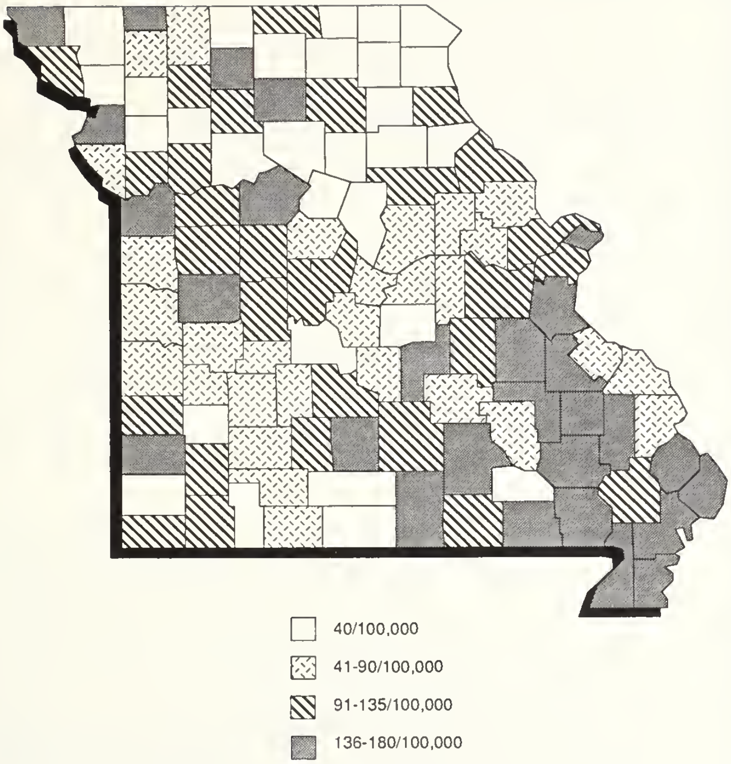
The lowest rates for five of the chronic diseases (coronary heart disease, diabetes, COPD, lung cancer, and liver disease) were clustered in northeastern counties (Schuyler, Scotland, Knox, and Macon, respectively). Madison and Shannon Counties in the southeast had the lowest rates for stroke and breast cancer. Cooper County had the lowest rate for cervical cancer, while the lowest rate for colorectal cancer occurred in Gentry County.

When the mortality rates for the nine target diseases were combined, Clark County in northeast Missouri had the lowest, or minimum, combined mortality rate of 200 per 100,000 population. St. Louis City had the highest rate--379 per 100,000 population--almost twice the minimum rate. Missouri as a whole had a combined rate of 277 per 100,000, which is 39% above the minimum county rate. When all other specified causes of death were combined, St. Louis City again had the highest mortality rate (366 per 100,000), and Cape Girardeau County had the lowest rate (209 per 100,000). Carter County had the highest ill-defined cause of death rate (121 per 100,000). Schuyler County had the lowest ill-defined rate (2 per 100,000).

Age-adjusted excess mortality rates for the combined nine chronic diseases for each Missouri county were calculated by subtracting Clark County's combined causes rate from the combined rate for each county. In general, the highest rates of excess mortality occurred in the southeastern part of the state; the lowest rates occurred in the northern counties of the state (Figure 1). St. Louis City and Jackson County (Kansas City) were also in the highest category for excess mortality.

The target causes as a group were highly correlated (r = 0.29 to 0.35) with the three variables of urbanization, poverty, and completion of high school education. Urbanization was positively related to the combined target causes (r = 0.35), although the correlations for cervical cancer and stroke were weak.

Urbanization was most highly correlated with deaths from breast cancer (r = 0.37). Poverty was directly related to death from cervical cancer, COPD, coronary heart disease, lung cancer, and stroke. High school education was inversely related to death from cervical cancer, coronary heart disease, diabetes, and stroke, with the most striking inverse correlation was with lung cancer deaths (r = -0.37). Low correlation was shown between mortality due to nine chronic diseases and federally designated health-care provider shortage areas (r = -0.05).



Missouri excess mortality rate = 78/100,000 population

Figure 1. Excess mortality for Missouri counties, calculated by using Clark County rate as a minimum, 1979-1991.

During the 13-year period examined in this study, 349,832 Missourians died as a result of nine chronic diseases. If the Clark County mortality rate for these diseases had prevailed across the state, nearly 100,000 fewer deaths may have occurred.

DISCUSSION

Using correlation analysis, we attempted to explain some of the distribution of mortality rates based on the commonly used sociodemographic factors of urbanization, poverty, and education. These sociodemographic factors may be proxy measures for important chronic disease risk factors (i.e., cigarette smoking, physical inactivity), since these behavioral risk factors are more common among persons of lower income and education.[6] However, reliable county-specific data for these behavioral risk factors are not available.

One possible explanation for the clustering of excess mortality in three areas (i.e., Jackson County [Kansas City area], City of St. Louis, and southeastern Missouri) is that these areas have the highest percentage of African-American populations in the state. Earlier studies have demonstrated that mortality from most of the targeted causes is higher among African-Americans than among Whites.[7] For example, African-American females tend to come to medical attention with more advanced stages of breast and cervical cancer, leading directly to poorer survival.[8,9] The higher poverty rates in the same three areas also contribute to higher mortality.[10-13] Comparison of provider shortage areas with excess deaths from chronic diseases did not support the hypothesis that health care provider shortages explain a substantial percentage of targeted mortality.

Screening and early treatment programs have proven efficacy in preventing or ameliorating some of these diseases.[14] In the clinical setting, opportunities exist for the health care provider to deliver more effective disease prevention and health promotion programs, not only through screening tests but also through patient education. Promoting behavior modification to prevent disease may seem less rewarding in the short run than prescribing curative medications.[15,16] However, a practitioner who routinely counsels patients on only three behavioral risk factors (i.e., cigarette smoking, lack of exercise, and better nutrition) will produce overall risk reductions for all nine of the diseases we have examined.[2] Numerous surveys have demonstrated the impact physician counseling has on patients' adoption of preventive behaviors.[17-21]

In addition to physicians, local health departments and other providers of preventive and primary care can play important roles in reducing the burden of these chronic diseases. Although efforts to address these issues may be limited in certain areas of the state, a recent survey of Missouri local health departments[22] indicated that 95% of health administrators would like to increase risk reduction activities at the local level. Resourses limit these interventions, however.

Several possible limitations of our study deserve mention. The issue of accuracy of the death certificate data was addressed by comparing death rates for the targeted causes with the death rates categorized as "ill-defined." For example, Carter County had the second-lowest mortality rate from combined causes in the state, but had the highest mortality rate from ill-defined causes. If the causes of these ill-defined deaths had been determined, the county's mortality rates from specific causes may have been higher. However, since most of the counties with the highest mortality rates from specific causes also had the highest rates from ill-defined causes, the regional distributions of lowest and highest rates would remain unaffected. The small number of cause-specific deaths listed for some counties limits statistical analyses. Rather than ranking counties for each cause, we combined deaths for nine chronic diseases and assigned counties to quartiles based on their excess mortality rate. Another limitation is that we conducted an ecologic analysis which relies on counties as the unit of analysis rather than individuals. Clearly, many of the diseases that we examined have genetic components[23] and we cannot account for these factors in the types of analyses performed.

As the major causes of mortality have changed, it is logical that the public health approaches for decreasing these deaths must also change. For many chronic diseases, innovative intervention strategies now exist to reduce their burden.[1,2,24,25] A key to prevention is application of technologies such as smoking cessation counseling, Pap testing, and mammagraphy.

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The Authors

Sharon Hoffarth, MD, MPH, is with the Department of Community Medicine, Saint Louis University School of Medicine in St. Louis. Ross C. Brownson, PhD, is with the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health. Donald J. Sharp, MD, is also with the Division of Chronic Disease Prevention and the Epidemiology Program Office, Centers for Disease Control and Prevention, Atlanta, GA. Bruce B. Gibson, BS and Wayne Schramm, MS, are with the Missouri State Center for Health Statistics, Missouri Department of Health, Jefferson City. Coleen Kivlahan, MD, MSPH, is the director of the Missouri Department of Health, Jefferson City.

Reprint Requests to
Dr. Ross Brownson
Missouri Department of Health
201 Business Loop 70W
Columbia, MO 65203

The Turning of American Psychiatry

Richard W. Hudgens, MD

PART I

Philosophic and Technological Factors

Philosophic changes and the "re-medicalization" of psychiatry in the past half century are associated with: evolution of the biopsychosocial model; new techniques for biologic studies; drug treatment for mental disorders; funding for research and training; and development of a criteria-based nosology for psychiatric disorders. The last development owes much to the work of four Washington University faculty members, beginning in the 1950's. The second part of this paper will examine their early careers and the institutional policies that fostered their work.

All medical specialties have changed greatly in the past half century, but psychiatry may have changed most of all; for the changes in this specialty have been philosophic as well as technological. Development of medications for mental disorders, and of techniques for clinical, genetic, and neurologic studies of those illnesses, have been preceded or accompanied by major shifts in what is considered the proper scope of psychiatry's mission and the proper means for psychiatrists to carry it out. At the core of this philosophical change has been a movement often labeled "remedicalization" for want of a more elegant term of equivalent descriptiveness.

Beginning especially at mid-century, studies at a number of academic centers, at the National Institute of Health, and at various pharmaceutical laboratories have resulted in the development of medications for the treatment of people with psychiatric disorders and in the development of techniques for studying the biochemistry, neuropathology, and genetics of those disorders. Accompanying this, and now undergirding much of the work, has been the development of criteria-based diagnostic systems for psychiatry.

Dr. Richard W. Hudgens is a professor of psychiatry at Washington University School of Medicine. For reprints contact him at 4940 Children's Place, St. Louis Missouri 63110, (314)362-2622.

This last development, based on clinical and epidemiologic studies, owed much to work done at the Washington University School of Medicine beginning in the 1950's. During the first two decades of its work on nosology, that psychiatry department was noted for its dogged insistence that replicable data were as important for clinical studies and treatment as they were for laboratory investigations, and for its consequent opposition to the psychodynamic theories that were the prevailing orthodoxy in American psychiatry.

The first part of this paper summarizes important themes in the development of psychiatry in the U.S. during the second half of this century. The second part will examine one set of factors in detail, the careers and research of the key people at Washington University, and the institutional setting in which their work took place. An analysis is offered to account for the "Washington University phenomenon" which played a role of some significance in the turning of American psychiatry during the second half of the 20th century.

AMERICAN PSYCHIATRY AT MID-CENTURY

In the latter part of the 19th century and early days of the 20th century, the various forms of madness were considered to be derangements of brain function, sometimes reflecting disruptions of brain structure as well. General paresis with its multifarious mental symptoms consequent upon infection became a model for investigators, who hoped to solve the puzzle of other psychiatric illnesses by pathological investigations or isolation of pathogens. Some disorders of lesser severity, like the condition we now call panic disorder, were ascribed to physiologic derangements elsewhere in the body.

By the second quarter of the 20th century, however, there was a movement away from structural and physiologic theories and toward psychological explanations for mental symptoms. Effective medical treatments for psychiatric disorders had not been forthcoming, and neuropathologic and biologic investigations of cause had gotten nowhere. It is true that researchers had demonstrated that delusions, hallucinations, delirium, and disturbed affective states could be the ultimate consequences of some vitamin deficiencies and endocrine diseases, and could be cured or even prevented by treatment of the primary disorders. However, these discoveries were not generally considered relevant for the conventionally "psychiatric" disorders, even when the latter were attended by florid delusions, hallucinations, and confusion. One reason was that with the exception of EEG, technology for study of the living brain had not yet been developed: it was even more of a black box than it is today. Without enough tools to study putative biologic processes leading to mental symptoms, interest in performing such studies was less than now. Another factor was that psychological theories of the causes of disorders of mood, thought, and behavior had become very influential in the United States; and intensive psychotherapeutic means of treatment of the disorders were regarded as most desirable whenever practical, even on occasion for people with psychotic symptoms.

By the end of World War II proponents of psychodynamic theories of cause and treatment exerted the dominant clinical influence in psychiatric residency training programs in this country. Their approach to patients and symptoms was individualized and based on theories of causation which could neither be proven nor disproven. This was in contrast to the scientific approach by psychiatrists doing biologic research in those same departments of psychiatry.

Psychodynamic theories were fascinating, and they were attractive to many of the same people who were approaching their laboratory work with rigorous skepticism. For instance, Daniel Freedman recalls that at Yale, a major spawning ground for biological psychiatrists since the 1950's, "leading analysts would come and give a Friday seminar, and people would be hanging from the rafters: 'things aren't what they seem. There are some dirty secrets beneath the surface. Behavior might have some meaning beyond what you see, something determining it.'"(Freedman,D.X., personal communication)

In the 1950's and early '60's the same psychiatric trainees who were comfortable with thinking of the delusions of myxedema madness as a disorder of brain function caused by thyroid disease were being trained to think of similar delusions as having a psychogenic basis if they occurred in the course of an affective disorder. Panic attacks, with their mysterious storm of physical symptoms, were widely assumed to be expressions of unconscious psychic conflicts. Clinical psychiatry was often taught as a thing apart from medicine, and it was not held to strict standards of evidence. Paul McHugh, who was in training at Harvard in those years, states, "Departments of medicine, surgery, and pediatrics were prepared to tolerate from psychiatry the kind of thinking they would never tolerate from any other discipline." (McHugh, P.R., personal communication).

This process was going on in leading academic centers of psychiatry, and the psychoanalytic movement was gaining strength after World War II. Where the vast bulk of patients were being treated, though, the story was different. Psychiatrists in practice and those working in state hospitals, whatever their theoretical orientation, were forced to cope with large numbers of very sick people. Many of them welcomed the advent of ECT and reserpine, the first antipsychotic drug. They sometimes welcomed even the transorbital lobotomies performed by Freeman and Watts in their sweep through the state hospitals of America. Whether or not psychodynamic theories of causation were correct, if the patient improved through an effective somatic treatment that cut the Gordian knot of tangled psychodynamics, so be it.

This was happening in the hinterlands; but in the academic centers too, changes and discoveries were taking place by the mid-1950's that would radically alter the theory and practice of clinical psychiatry.

CHANGES IN THE SECOND HALF OF THE 20TH CENTURY

In addition to some developments in interpersonal and behavior therapy, there have been at least five separate but interrelated processes with growing influence in academic psychiatry in recent decades:

1) An attempt to understand and treat medical, social, and conventionally psychiatric disorders as interrelated phenomena in each afflicted person. This model, whose proponents trace their philosophic lineage back to Adolf Meyer, was called psychosomatic by the 1950's. It has been broadened in scope and re-christened biopsychosocial. Romano and Engel were prominent apostles of the relevance of this approach, not only for psychiatry, but for medicine as a whole; and the Department of Psychiatry at Rochester is generally recognized as the mother church of the movement.

During earlier decades, when psychoanalytic theory was most strongly influential, the idea was promoted that certain illnesses like peptic ulcer, asthma, and ulcerative colitis were at least in part the products of unconscious and unresolved emotionally relevant conflicts requiring intensive psychotherapy for their resolution. This got nowhere much. Romano became skeptical of speculations about cause that were unsupported by data, while accepting the usefulness of psychodynamic psychiatry for understanding emotional and social factors, often forgotten, which might have influenced the course of illness. (Romano, J., personal communication)

A very broad view of psychiatry's mission was a major factor in the early philosophy of the community psychiatry movement, which had as one goal the "primary prevention" of mental illnesses by means of psychotherapy and social intervention. This proved an ephemeral goal, and the more successful community mental health centers are now primarily occupied with treating very sick people, having their hands full with that task. Nevertheless, these "neo-meyerians" still view the role of psychiatry as very broad, encompassing much of general medicine and sociology.

2) The development of a broad range of electroencephalographic, biochemical, genetic, and radiographic techniques for studying people, including their living brains, directly and indirectly in sickness and in health. This is not just one development, of course, but sometimes unrelated parallel developments taking place in many fields of science. Psychiatry has often been the beneficiary of techniques designed for other specialties. Many such technical advances, however, have been worked out within departments of psychiatry; and techniques developed primarily for other specialties have been applied to the study of mental disorders by clinical and preclinical faculty in psychiatry departments.

Just now new procedures for imaging anatomic changes and metabolic processes in the CNS, and studies of the genetics of mental disorders, are receiving attention as the cutting edge of psychiatric science. But the history of biologic and pathologic studies relevant to mental illnesses is as old as the development of techniques for preparing slices of brain for histologic examination. Some old lines of investigation fizzled, but may be headed for revival, such as the search for infectious pathogens and toxins in schizophrenia. Other lines of study have continued in robust health, such as EEG research, going strong at one center or another for many decades and increasing in sophistication. Endocrine investigations, beginning with thyroid studies after World War I and continuing with current investigations of the hypothalamic-pituitary-adrenal axis, continue to produce findings relevant for psychiatry.

3) The production of drugs for the treatment of people with psychiatric disorders. The search for pharmacological solutions to psychiatric symptoms, on record for at least 2500 years, really hit its stride in the 1940's with discovery of the efficacy of lithium in mania. Since then the development of new substances has accelerated, driven by a competitive pharmaceutical industry as well as psychiatrists, with the current favorite target syndromes being anxiety, depression, and those types of schizophrenia characterized by negative symptoms. There are probably too many different medications already, but there remains an irreducible minority of patients who don't get well enough on any substance yet available. Besides, none of these drugs cures the illnesses, so the search goes on.

Lee Nelken Robins, ca. 1960

The advent of relatively effective pharmacological treatments for mania, depression, schizophrenia, anxiety, and obsessive complusive disorder has played a leading role in the movement from inpatient to outpatient treatment for people with serious psychiatric illnesses, and a leading role in the decline of long-term psychotherapy as the most desirable primary treatment for people with severe disorders of mood, thinking, and behavior.

4) Increases in money available for research and training. Progress in psychiatric research owes most in a material sense to the beneficence of the National Institute of Mental Health. That in turn was owing to the lobbying of articulate advocates for funding research studies and training programs after World War II. The competition for money has tightened greatly in the past decade, as the psychiatric research establishment has enlarged and as costs have increased due to the expense of new technology and to inflation, requiring higher salaries. Private foundations and state governments acquire increasing importance as sources of funds for research and for and training programs. The scrambling intensifies.

5) The development of criteria-based diagnoses for psychiatry. This process had roots in the work of Kraepelin, of course, but also in general medicine. By the mid-1950's the idea that the field of psychiatry should be viewed along these lines was already a guiding principle for the investigators at Washington University. Through longitudinal clinical and family studies of various syndromes, and proselytizing for their ideas, the Washington University faculty were instrumental in establishing the primacy of classification and diagnosis as bases for genetic and biologic, as well as clinical and epidemiologic studies. By the mid-1970's Spitzer, at Columbia, had assumed a position of leadership in the drive for criteria-based diagnoses in the official nomenclature of the American Psychiatric Association, working with several Washington University colleagues. This has become a new orthodoxy, supplanting in primacy both a "severity spectrum" model and an individual-psychodynamic model as a starting point for scientific study of patients and mental disorders.

The work is far from finished, since so many patients with disorders of thought, mood, and behavior fall outside established diagnostic boundaries. There is a need for more longitudinal studies, taking into account biologic variables and personality traits. The interaction between genetic and environmental factors must be elucidated. The field of psychiatric nosology is in flux and will remain so until connections between brain function and behavior, in the broadest sense of that latter term, are less obscure.

THE WASHINGTON UNIVERSITY CONTRIBUTION

There is general agreement, both within Washington University and in the academic psychiatry community outside that school, that the Washington University faculty made key contributions toward the establishment of a criteria-based nosology for the field, and thus played a major role in re-establishing a medical model for the study and treatment of mental disorders. An important part of this contribution was made through longitudinal clinical and family studies of psychiatric syndromes. Prior to the 1950's such studies were an integral part of psychiatric research in Europe, but not in the United States. Now they have become an indispensable part of several types of clinical and laboratory investigations in this country, thanks in large part to the model set at Washington University.

There is further agreement that the Department of Psychiatry at Washington University did not play a significant role in the laboratory investigations that led to the pharmacological revolution in psychiatric treament; that its members were vocal and sometimes contentious opponents of the psychoanalytic model; and that they formed a tight and often beleaguered fellowship. The last factor served to enhance the consistency of their work, the faculty's esprit de corps, and the promulgation of their particular gospel.

I believe that those generalizations about the Washington University Department of Psychiatry in the 1950's and 1960's are accurate, that they are interrelated, and that they are understandable through examination of factors at that medical school and of the character and work of four key members of the psychiatry department, Eli Robins, Lee Nelken Robins, Samuel B. Guze, and George Winokur. The second of this pair of papers is a study of these people and events at mid-century, the crucial time of change for American psychiatry. Their careers have had great importance in the history of the specialty.

PART II

Analysis of Washington University's Contribution

The first part of this paper discussed the transformation of the field of psychiatry since 1950 and the key philosophic and technological developments promoting it. One component of this transformation was the establishment of a medical model for the field: application of scientific principles to the study and treatment of psychiatric illnesses and the development of a criteria-based system for diagnosing those illnesses. This change owed much to the work of four Washington University faculty members, Eli Robins, Lee Nelken Robins, Samuel B. Guze, and George Winokur, and to the insitutional policies that fostered their work, beginning in the 1950's.

The first part of this paper discussed the major philosophic and technological developments which have resulted in a profound change of direction in American psychiatry since mid-century.

Among the factors promoting this change have been the "remedicalization" of the specialty - application of scientific criteria for the study and treatment of psychiatric illnesses and the concomitant development of a criteria-based system for diagnosing those illnesses. This establishment of a medical model in psychiatry owed much to work by four leading faculty members of the Department of Psychiatry at the Washington University School of Medicine, beginning in the 1950's, and to the institutional policies that fostered that work. This paper focuses on the early careers of those four, Eli Robins, Lee Nelken Robins, Samuel B. Guze, and George Winokur, and on historical developments at Washington University which created a climate in which their work could prosper and have international influence.

ANALYSIS OF INSTITUTIONAL FACTORS

At the Washington University School of Medicine research on the nervous system was in progress in three preclinical departments and one clinical department during the 1920's and 1930's. Plans for a neurologic institute at the medical center were scuttled by the Great Depression, but significant work on the nervous system done in that era later won Nobel Prizes for Joseph Erlanger and Herbert Gasser, with a near miss for George Bishop.

By 1935 the dean was pushing for the Rockefeller Foundation grant that was to result in the establishment of a Department of Neuropsychiatry with a full-time faculty devoted to both teaching and research. Washington University had been the second American medical school, after Johns Hopkins, to adopt this faculty model. The Rockefeller grant proposal included a request for support of research in schizophrenia by investigators in several departments doing histochemical studies of brains collected at autopsy, studies of peripheral nerve function in living patients, and studies of young schizophrenic subjects with respect to anthropomorphic variables and metabolic and autonomic functions.[1]

Thus there was an institutional tradition and interest in the study of psychopathology as the manifestation of anatomic and physiologic derangement. Moreover, the organizational structure of the medical school made it likely that senior faculty appointments, including department heads, would be made on the basis of scientific accomplishment: authority was not vested in the single person of the dean, but in an executive committee of department heads who had themselves been chosen largely on the basis of their research. This also made it unlikely that someone who made psychoanalysis the centerpiece of his work would be picked as a department head at Washington University.

The new Department of Neuropsychiatry was established in 1938 under the neurologist, David Rioch, who was there only briefly. The emphasis shifted to psychiatry in 1942 with the appointment of Edwin Gildea, a 44-year-old associate professor of psychiatry at Yale, as head of the renamed Department of Psychiatry and Neurology. Gildea's major research efforts had been in attempts to correlate levels and metabolism of blood lipids, and thyroid function, to mental disorders.[2] He regarded research as a holy calling, and he had hoped that his work would lead to a breakthrough comparable to that of Castle, who had discovered intrinsic factor in his search for a cure for pernicious anemia. (Gildea, M., personal communication)

Eli Robins, ca. 1960

Gildea's tenure as department head lasted 21 years, to 1963, and during those years the crucial changes occurred which were to set the course for the department into the last decade of the century. His own research after he became department head was to have little impact, but his criteria for what constituted acceptable research were influential with his faculty. He was erudite, very widely read, and of a genial and permissive disposition. The latter quality contributed at first to a rise in the influence of psychoanalysts as teachers on the part-time faculty, in spite of the fact that Gildea privately deplored their effect on students and residents. (Gildea, M., personal communication). He found it hard to say no to anyone. But it was also his permissiveness that led, by 1955, to the assumption of effective leadership in all aspects of the department's functioning by four faculty members then in their early 30's, Eli Robins, Lee Nelken Robins, Samuel Guze, and George Winokur.

ANALYSIS OF DEPARTMENTAL LEADERSHIP

Those three psychiatrists and one sociologist were to have influence well beyond the boundaries of the department of psychiatry. Their combined published works would total 981 by the end of the 1980's, and they were to hold positions of influence on editorial boards and study sections. By 1990 there would have been more than 300 psychiatists and 100 post-doctoral Ph.D. fellows trained under their tutelage, and their work would have a major impact on patient care and on clinical and biologic research in the U.S. and other countries.

Eli Robins was respected both for his biological and clinical research. He would succeed Gildea as department head from 1963 to 1975. Guze would succeed him as head from 1975-1989, and wearing simultaneously the hats of psychiatry chief and vice chancellor for medical affairs, he would become the most influential person at the Washington University Medical Center during the 1970's and '80's. Winokur, the internal sparkplug of the clinical trainees and junior faculty at Washington University, was to become a leader of national scope before and during his tenure at the University of Iowa during those same decades. Lee Robins would become a founder and on-going leader of the field of psychiatric epidemiology, devising and refining methods of study and diagnostic processes with world-wide impact.

Colleagues outside Washington University often comment on the unity of purpose of the department over the years and of its generally close-knit character. This stemmed in part from the intense and amicable working relationship of the four de facto leaders of the department during the 1950's and '60's. The backgrounds of the four were similar. All were from recently immigrating eastern European Jewish families who stressed scholarship as a primary activity. Two of them had physician fathers, and the fathers of the other two had been frustrated in their ambitions for medical careers by economic circumstances. The four faculty members' eventual choices of career and the direction of their work are understandable in the light of their early experiences.

Eli Robins, from a small town in Texas, had exceptionally broad interests both in science and liberal arts. In 1942 in his third year of medical school he transferred to Harvard from the University of Texas at Galveston, and subsequently pursued residency training in psychiatry and neurology. It was *de rigeur* on the east coast for a trainee to seriously consider psychoanalysis, and Robins was analyzed for a year by Helene Duetsch but decided the process was useless (Robins, E., personal communication). By nature he was always disinclined to talk about himself.

Left to right: Eli Robins, Edwin Gildea, George Winokur and Samuel Guze. Early 1960's.

The greatest influence on Robins at Harvard was Mandel Cohen, a psychiatrist and neurologist who had trained under Adolf Meyer. Cohen, a maverick in the opinion of most psychiatrists at Harvard, was a determined foe of psychoanalysis, scathing in his pronouncements about it (Cohen, M., personal communication). It was Cohen who got Robins into his first longitudinal studies of psychopathology, with research on hysteria.[3]

However, Robins had broader ambitions for his work. He aspired to discover correlations between brain chemistry and psychiatric disorders (Robins, E., personal communication).

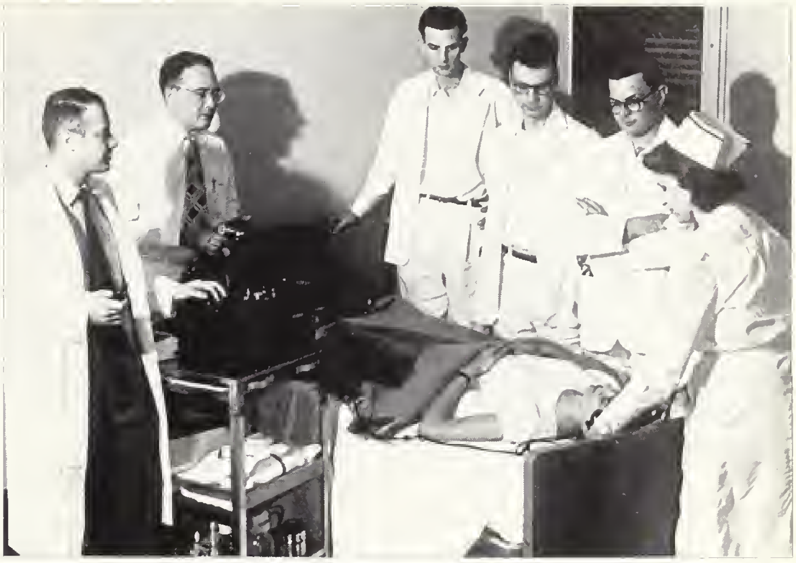
At the suggestion of Cohen, who had described Gildea as the "great hope for American psychiatry", Robins applied for a position at Washington University and started his work in St. Louis in 1949 at the age of 28. From the beginning he straddled clinical and preclinical sciences, working as a pharmacology fellow under Oliver Lowry, the pioneer of micro-techniques, and as a clinical investigator and teacher in the department of psychiatry.

Lee Nelken, who married Eli Robins in 1946, had been raised in New Orleans in an environment made stimulating by, among other things, discussions of philosophy and politics with left wing intellectuals of the 1930's and '40's. Her choice of sociology, which she pursued at Radcliffe and Harvard, was motivated by a wish to contribute to world peace and non-violence (Robins. L.N., personal communication). During her early 20's she interrupted her graduate studies and spent 15 months in wartime Washington, D.C., at the Division of Program Surveys, interviewing, coding, and helping to direct surveys.

This activity was similar to work she was to pursue through her career. After she moved to Washington University she was to turn to longitudinal studies of psychopathology, beginning with a landmark study of sociopathy;[4] to refinements of psychiatric diagnostic methods and systems of nosology through increasingly sophisticated survey instruments that were to become worldwide standards; and to epidemiologic studies that would serve the field of genetics as well.

Samuel Guze's entire medical career, except for one year of residency, has been at Washington University. He trained in internal medicine and probably would have remained in that field had it not been for George Saslow. Saslow had set up a psychosomatic medicine division at Washington University with a view to bridging the gap between psychiatry and internal medicine, and Guze was convinced by this charismatic teacher that the two specialties had relevance to each other (Guze, S.B., personal communication). Saslow had come to the Department of Psychiatry from Harvard, where he like Eli Robins had been influenced by Mandel Cohen. Like Cohen, Saslow became a dedicated foe of psychoanalysis: he practiced a brand of psychotherapy that took into account all aspects of a patient's life, but with a commonsense approach. He was to spend 12 years at Washington University and soon afterwards became chairman at the University of Oregon.

Guze's early career by-passed considerations of psychoanalysis altogether. With training in two specialties he soon developed an interest in medical center administration that was eventually to lead to the vice-chancellorship for medical affairs. His influence at the school was a factor in the preservation of the continuity of philosophy in the department. No outsider has been appointed department head since 1942.


George Winokur (left) giving ECT in Renard Hospital. ca. 1958

George Winokur entered psychiatry because of an early interest in psychopathology. A Baltimorean, he was diverted from a planned entry to psychoanalysis when he transferred from Seton Institute in Baltimore to Washington University for his last year of residency training (Winokur, G., personal communication). He joined the faculty in 1954 at age 29. An outspoken and stimulating teacher, he was eventually to have the closest day-to-day influence on the first-year residents in the training program, which he would direct along with the psychiatric inpatient service. The anti-psychoanalytic reputation of Washington University in the late 1950's and 1960's owed much to the drumfire of mockery which Winokur rained down upon its proponents. He said, among other things, that the only worthwhile attacks on psychoanalysis were *ad hominem* attacks, because all substantive issues had been settled by the analysts' failure to produce real data in support of their positions (Winokur, G., personal communication). Winokur would turn out to be the most prolific publisher of scientific articles and the only one of the four principal members of the department ever to leave Washington University, moving to the University of Iowa as chairman in 1971.

DEVELOPMENT OF THE DEPARTMENT IN THE 1950'S AND '60'S

Saslow left Washington University in 1955, and Guze took his place in the psychosomatic division, with appointments in psychiatry and internal medicine. He became director of the psychiatric outpatient clinic and consultation service, while Winokur assumed direction of the inpatient service and residency training program, and Eli Robins directed the teaching of medical students. These three young faculty members thus assumed control of all the teaching programs, and the permissive atmosphere for psychoanalysis came to an end. Shortly afterwards, the Psychoanalytic Institute of St. Louis was formed, and the psychoanalysts, who had been quite influential in the training of residents, concentrated their attentions there instead.

It was a small department then, and Robins, Winokur, and Guze were in close contact. Robins had at first known a broader literature than the others, influenced by Mandel Cohen and psychiatrists in Britain and Scandinavia. This type of literature, descriptive, classificational, and emphasizing the natural history of disease, became the new gospel. The three faculty members enunciated principles that were to govern the department's training mission from then on: students and residents must be taught a systematic and scientific approach to clinical psychiatry and be made conversant with the literature that supported such an approach. At a number of other insitutions the scientists were sticking to their laboratories, and the clinical training was left by default to psychiatrists of a psychodynamic philosophy. Here the clinicians would have to be scientists as well. Real data, not mere plausibility, would be required as the evidence in support of any conclusion. A system of classification comparable to that in other fields of medicine must be developed in psychiatry. This could not be done without longitudial followup and family studies. All residents must spend time doing research, even if they did not plan to make a career of it. Since the field of psychiatry cut across other disciplines, research would be encouraged not only in clinical psychiatry, but also in neurochemistry, pharmacology, genetics, and epidemiology, even if the clinical applicability of such work turned out to be remote. Most of these principles do not appear unusual nowadays, having become standard in many places, but they were rare in 1955, and the faculty at Washington University were early leaders in their enunciation.

Significant research in ECT was done by George Ulett in the 1950's and by Pitts in the 1960's, but treatment of psychiatric disorders by medication or psychotherapy, was not a particular research interest of the department in those early days. Eli Robins was as skeptical of antidepressant drugs as he was of psychoanalytic psychotherapy and remained so, long after their efficacy had been demonstrated. He was the leading light in the department from 1955 to 1975, the only senior clinician/chemist, and he never pursued investigations of psychopharmacology. The department was not part of the chemotherapy revolution unfolding in the U.S. during those years. Similarly, there was to be no research on psychotherapy in the department until George Murphy's work on cognitive therapy in the 1970's.

The Washington University full-time system may have contributed to this indirectly. Winokur, Guze, and Eli Robins did not follow large numbers of their own patients, though they examined very many in supervision of residents and in their research. All fees from private patients went to the department. No one could earn money from clinical practice; nor were salaries in any way geared to income from clinical services. Rather research productivity was the primary goal, and the faculty sought it for themselves and as role models for their junior colleagues. Treatment was just not in the mainstream of the department's activity.

Treatment of all sorts, including psychotherapy, was taught to residents and medical students, however. Psychotherapy was not the centerpiece of the training program as at some institutions, nor was it based on any philosophy of causation. It was believed to be indicated irrespective of the nature of the nature or cause of the patient's psychiatric disorder or life stress. This was enlarged upon by Guze and George Murphy in a paper titled, "An empirical approach to psychotherapy: the agnostic position." "If we study [the patient's] personal and social life he may be helped to alter circumstances that contribute to discomfort, or change behavior that leads to dissatisfaction. He may then feel better, suffer less disability, cope with his illness more successfully, etc. While psychotherapy is thus non-specific for the clinical illness, it is individualized for the particular patient."[5] This philosophy, enunciated by those two former pupils of Saslow, was reminiscent of his broad and pragmatic approach to every patient.

Laboratories were set up within the department of psychiatry during the tenure of Gildea, but Eli Robins was the moving spirit behind their development. This was one of the first departments of psychiatry in the country to be so equipped. Direct applicability of research to clinical psychiatry was not considered important. The case of Blake Moore, recruited by Robins in 1960, was typical of the department's attitude toward research and encouragement of junior faculty: Moore had experience with protein fractionation but knew nothing about neurobiology and had no grant, no lab, and no specific plan. With the support provided by Robins he was to do pioneering work on brain proteins that would decades later prove relevant to clinical psychiatry and neurology (Moore, B., personal communication).

DEVELOPMENT OF A CRITERIA-BASED NOSOLOGY

Development and refinement of criteria-based diagnoses for psychiatric illnesses was the culmination of the Washington University faculty's clinical research in the 1950's and '60's. It was an achievement which even critics of the department came to acknowledge and praise. The accomplishment was the outcome of several factors shared in common by the four leaders on the faculty. First, all four had an interest in psychopathology and the natural history of disease, and they worked extensively in this area. Second, they approached clinical material from an atheoretical and descriptive basis. Opposition to psychoanalytic theory was thus inevitable, and the vehemence of their opposition to it was dictated by the perceived influence of psychodynamic theory among professional organizations and decision-makers on funding bodies in the post World War II era. Third, all four, but particularly Lee Robins and Guze, had strong backgrounds during their early training in the techniques of interviewing people according to systematic, standardized formats.

Before he left Harvard Eli Robins was working on a delineation of hysteria, which was published in 1951.[3] Guze's longitudinal study of that syndrome[6] and Lee Robins' influential work on sociopathic personality[4] began in the 1950's. Both soon began work on alcoholism, and Winokur began his studies on affective disorders in the early 1960's. By then also junior members of the department were following their lead. Most of the clinical studies and some laboratory studies in the department were syndrome-based and required specific criteria for defining the limits of those syndromes. This led in turn to the necessity for family studies and, by natural extension, to genetic investigations. A number of individual sets of criteria sprang up as researchers constructed their studies.

By the late 1960's the need was evident for a uniform set of diagnostic criteria so that the results of studies in the department would be comparable, replicable, and useful to workers at other institutions. Under Eli Robins there developed regular meetings of a committee consisting principally of him, Guze, Winokur, Robert Woodruff, and two junior members of the department, Rodrigo Munoz and John Feighner, who was a resident in the training program. There was input from others, especially Lee Robins, who was developing the interview instruments for diagnostic and epidemiologic studies.

Through literature searches and studies of the reliabilty and validity of local followup investigations the committee devised criteria for the diagnosis of 14 syndromes, finally published in 1972 and variously known as the St. Louis, or Washington University, or Feighner criteria (Feighner was the first-listed author).[7] This paper restated Robins and Guze's five factors desirable, though not yet perfectly attainable for establishing diagnostic validity for a syndrome: clinical description, laboratory studies, delimitation from other disorders, longitudinal followup of subjects, and family studies.[8] A necessary component of a criteria-based diagnostic system is the establishment of criteria for scoring symptoms as positive, so the committee restated the department's long-standing requirements for this: the symptom must be disabling to some extent and leading the patient to seek treatment, or be of salient clinical importance, and not be explainable by a non-psychiatric disorder. The development of the basis for the diagnostic system, and in large part the development of specific criteria for the syndromes themselves, had been underway at Washington University for a quarter of a century before the Feighner paper was published. In 1974 *Psychiatric Diagnosis*, by Woodruff Goodwin, and Guze,[9] expanded upon the principles discussed in earlier papers. Now in its fourth edition, the book has become very influential as a basic text. Influenced by the work at Washington University, Spitzer, who had sought and obtained leadership of the APA task force preparing DSM-III (Spitzer, R.L., personal communication), was instrumental in bringing the criteria-based diagnostic system into the mainstream of clinical practice.

Current systems and interview instruments for diagnosing and studying mental disorders throughout the world are the legacy of all this work. Processes set in motion in the Department of Psychiatry at Washington University at mid-century, conducted in particular by four faculty members and facilitated by the traditions and administrative policies of the medical school, have made significant contribution to major changes in the field of psychiatry. That work done at Washington University continues to contribute to the foundations of ongoing clinical, epidemiologic, genetic, and biologic studies of psychiatric illness.

Samuel Guze (left) and George Winokur (right), with William McKnelly, Jr. Early 1960's.

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Desktop Medicine for Physicians

J. Craig Klimczak, DVM, and Joyce A. Mitchell, PhD

A new technique has emerged for rapid and wide-spread delivery of medical services and information. It is fast gaining acceptance by radiologists and other specialists who serve sparsely populated areas or who must collaborate with physicians at hospitals located some distance away.

Called "telemedicine", this time-saving technique combines personal computers with telephone transmission lines. Telemedicine permits front line clinicians the diagnostic, reference and peer referral possibilities that once were reserved for physicians working at the more sophisticated medical centers.

Telemedicine certainly is not a new idea. Basically, it refers to the use of telecommunication technology while treating patients. It has been used with varied degrees of refinement for about as long as there have been telecommunication networks.[1]

Telegraph operators in the 1880s requested serum during diphtheria outbreaks by tapping out urgent messages to doctors at towns up and down the line. In 1905, Einthoven recognized the difficulties involved in transporting patients, particularly when severly ill, to a physiological laboratory.[2] This realization lead to Einthoven's experiment using the Leiden telephone system to transmit ECG signals from the Leiden University Hospital to the Physiological Laboratory located some distance from the hospital. In the 1960s, medical researchers at universities located in different states used "dedicated" telephone lines so their schools' big mainframe computers could share data and processing capacity. And, only a few years ago, certified ambulance crews began using space age cellular telephone and telemetry technology to transmit a patient's vital signs while enroute to the hospital from an accident.

Missouri's physicians traditionally have been leaders in the field of developing techniques to utilize long distance communication links for medical applications. Dr. E. Grey Dimond developed a device that used FM signals to transmit the electrocardiograph test results over telephone lines.[3,4,5] Dr. Arthur E. Rikli, professor emeritus of family and community medicine at Missouri University, also participated in experiments during the early 1960s using telephone lines to transmit ECG signals.

This pioneering spirit has continued into the 1990s. Today, for example, Dr. David M. Witten, professor emeritus of radiology at Missouri University, and his son, David M. Witten III, a software engineer, are exploiting the availability of low cost communication and computer technology to develop software programs that will permit the more economic transmission of radiographic images over telephone lines.

TELEMEDICINE INCENTIVES

Two main factors drive the present growth of telemedicine. First, the personal computer industry has advanced to the point of routinely marketing inexpensive, easily dedicated, desktop computers with expanded communication and graphics capabilities. These desktop computer systems, coupled with this nation's ubiquitous telephone networks, allows the transfer of vast amounts of information between individuals over existing voice grade telephone lines. These transmissions mimic the massive data messages that flow between the huge electronic data processing centers, but run at only a fraction of their cost.

Second, there is increased pressure on traditional health care delivery systems to reduce costs and expand services to more people. Delivery of health care information and services over telephone lines therefore is an attractive option for even the most remote rural hospital, clinic or physician's office.

Don Sipes, CEO Pershing Memorial Hospital.

TELE-RADIOLOGY

In Missouri, telemedicine systems are appearing in radiology departments statewide. These systems allow the attending physician to send electronic copies of radiographs, CT scans, and MR images for referral consultation at any location that has a computer terminal with a modem. These systems help physicians cover more ground, without leaving their offices. They offer particular advantages to patients and physicians in Missouri's rural health care settings.

Donald Sipes, CEO of the Pershing Memorial Hospital in Brookfield, Missouri sees this new technology as an essential element for helping smaller rural hospitals to maintain their standard of care. "Smaller rural hospitals," Sipes said, "are expected to meet a national standard of care rather than a local or regional standard."

Because of this expectation, many doctors practice defensive medicine. This drives up costs and may cause a patient the inconvenience of being transported to urban centers for more tests or collaboration. "A baby born at Pershing Memorial Hospital is expected to receive the same standard of care as a baby born at the University Hospital in Columbia." Sipes said.

Small rural hospitals and physicians somehow must reconcile the dilemma of meeting a high standard of care without shipping every patient that presents with a complication on to a larger city or hospital that has a specialist in a given field. Sipes and others believe that telemedicine will provide part of the answer.

He has some practical experience to justify this assumption, too. Pershing Memorial Hospital, like many smaller hospitals, finds it difficult to attract and support medical specialists. Sipes accordingly has installed a tele-radiography system, *see figure 1*, to increase patient access to Dr. John Rose, a radiologist who serves as the attending specialist for hospitals within a fifty mile radius of Brookfield, including Chillicothe and Trenton. The tele-radiography system, which includes a connection to a personal computer in Dr. Rose's office, cuts many hours of travel time by allowing him to view patients' films without driving to the various hospitals.

When he receives an electronic copy of a patient's radiograph over a voice grade telephone line, Dr. Rose can consult with the patient's primary care physician as the image arrives by picking up the telephone and speaking with the doctor at that time

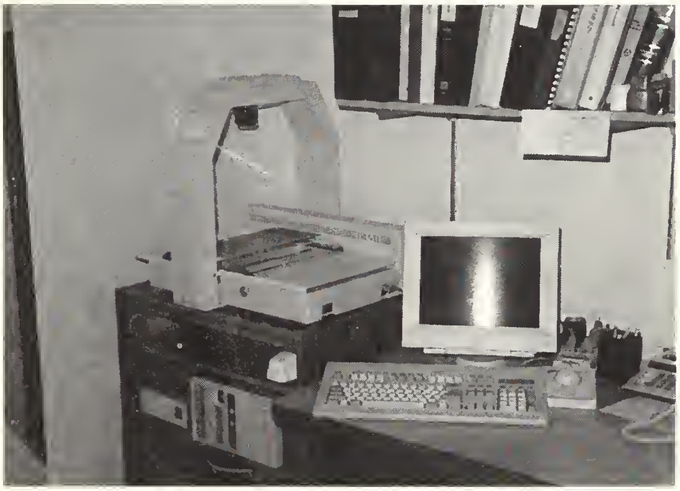

Fig. 1 - Tele-radiology system, above, is located in the radiology reading room at Pershing memorial Hospital in Brookfield. The scanner at left formats the image for storage and transmission. The computer is a 386, 33mhz machine with 4 meg of RAM. It is also equipped with a 14.4 KB modem and a SVGA monitor.

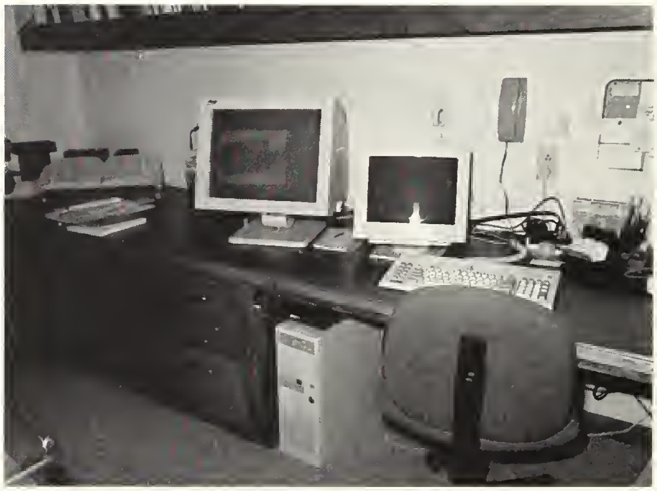

Fig. 2 – This typical tele-radiography terminal, above, is located in Dr. David Witten's home office in Columbia. This system includes a 486/33mhz machine with 8 mb of RAM, a 21" B&W monitor and a 15" SVGA color monitor, and a 14.4 KB modem.

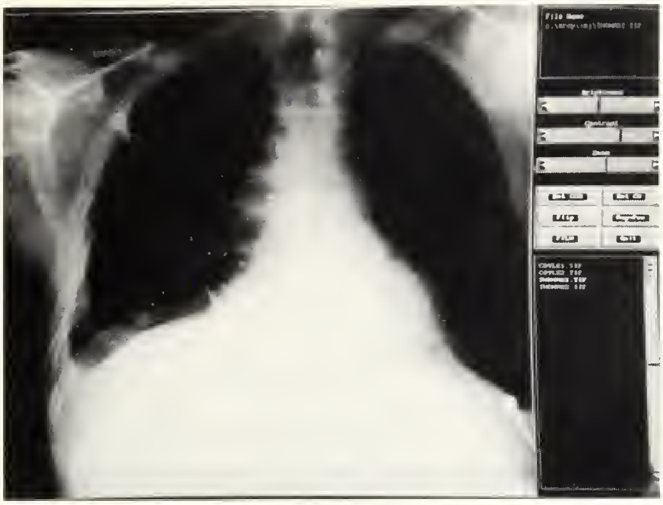

Fig. 3 - MS DOS™ based image, using 21" black and white monitor. Right side of screen shows the "point and click" controls used for selecting image file to display, change contrast, brightness or zoom

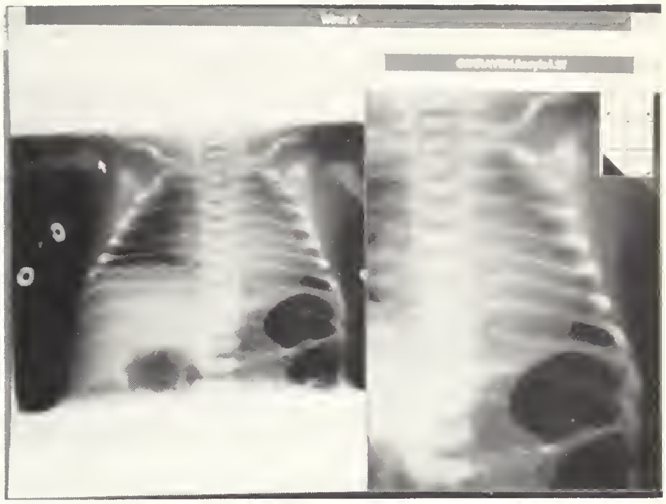

Fig. 4 - Microsoft Window's™ version of the tele-radiography software. This software allows multiple images to be viewed simultaneously.

or he can leave a recorded message describing his recommendations at a later time. In either case, the scanned image will have been stored in his computer's memory, *see figures 3 & 4*. Pershing Memorial and many other hospitals are using telemedicine technology to provide more services to more patients with greater efficiencies.

Backup support for Dr. Rose and his patients is in place. Additional tele-radiography connections extend to both the University of Missouri Hospital & Clinics in Columbia and to the office of Dr. David Witten, *see figure 2*, a radiologist and father of the software developer, David Witten III, who created this system's programs. These system redundancies also provide for increased collaboration and peer communication between physicians such as Dr. Rose in rural locations and physicians at research/teaching hospitals and major medical centers around the state and nation.

Perhaps the prime advantage for patients is that these consultations reduce the number of transfers from primary care centers to specialized or tertiary care facilities. This technology allows the doc-

Continued on next page

Telemedicine: one branch of Medical Informatics

Telemedicine is only one of the areas of study being pursued by researchers interested in a new medical subspecialty, Medical Informatics. Medical Informatics explores innovative ways to use computers to perform tasks in medicine and holds out great promise for reducing health care costs and improving the quality of care.

Missouri's medical informatics group is based at Lewis Hall on the Columbia campus of the University of Missouri. The MU group is one of only 10 such research training programs in United States and is considered a leader in this infant discipline.

An academic support unit for the School of Medicine, the group is interested in computer/telecommunication applications in areas of telemedicine, medical education programs, practice management, patient records storage and retrieval, scientific literature databases, scheduling, computer controlled robotics surgery, medical telemetry for home care patients, and a plethora of related topics.

The group annually accepts 2 postdoctoral fellows, 2 predoctoral fellows for graduate level study and several trainees who rotate through the program on a short-term basis. Nearly all of the group's research projects are interdisciplinary, combining health care with education, engineering, library science and other disciplines. For more information call: 314/ 882-6966.

tor on the scene and a tertiary care colleague who might be in an office many miles away to study the same radiograph and other records before deciding whether or not a transfer would be in the patient's best interest. Electronic collaboration was a key factor in deciding not to transfer two patients recently from Pershing Memorial Hospital to the nearest tertiary care center.

Along with the advantage of decreasing medical costs by treating a patient at a primary care facility, there are personal benefits, too. Patients and their families are spared the discomfort of travel and the inconvenience of staying, perhaps for an extended period, in a strange town during treatment.

If a decision to transfer a patient is made, Sipes says, Pershing Memorial's telemedicine system improves the continuity of care. Personnel at the referral hospital have a head start in evaluating the patient's condition before arrival. Medical records, laboratory and test results, as well as diagnostic images are sent over telephone lines, much like fax messages. This reduces time delays and the costs of duplicating extra copies of the file. Patients and their families enjoy the practicality of such cooperation between the two facilities. And, because the tertiary physician already is familiar with the case, the patient has less of a feeling of starting over with a new doctor.

LOWER COST EQUIPMENT AVAILABLE

Tele-radiography systems have been available from equipment vendors for several years, but there have been price and connectivity trade-offs to consider. The prices of these turnkey proprietary systems are high, ranging from $50 to $200 thousand, and most require the use of the same vendor's equipment at the various linkups along the loop. Some of these installations interface poorly with other vendor's equipment and some, while they handle radiographic transmissions well, are not able to send and receive images from other scanners, such as the newer CT and MR models. Technological limitations and high prices have prevented the hospitals that need this equipment the most from installing it.

Dr. David Witten, Columbia, has been attacking the access quandary for many years. An early solution involved sending specialists to rural communities around the state in specially equipped vans. His "circuit rider" radiology service was helpful, but the expense and inefficient use of the specialist's time encouraged Witten to keep looking for alternatives. His study included telemedicine, but the shortfalls mentioned earlier stymied its use by rural medical centers.

Witten's son, David III, a software engineer, shared his father's belief that more was needed. Working as a team, they developed a low cost teleradiography system by using generic, widely available equipment. To keep costs as low as possible, they purposefully picked off-the-shelf desktop computers and modems; non-proprietary large screen monitors and film scanners, and voice grade telephone lines. The younger Witten wrote the software to drive the system. His software unites the various components: allowing the hardware to capture, manipulate, display and transmit the images. Putting such an economical system on line was not accomplished without some tradeoffs, however.

Transmission speed (baud rate) and image resolution (screen clarity) considerations have dramatic proportional impact on each other. Using a relatively slow baud rate (2400 is common) increases by many hours the time needed to transmit the millions of bits of data contained in a high resolution image. Transmission speeds and image resolution must be balanced to allow for practical transmission times while avoiding deterioration of the image.

Since image quality had to be maintained, their solution focused on increasing modem speed. Fortunately, at this time a new 14.4 kilobits per second modem with built-in data compression came on the market. This improved piece of equipment permits a transmission time of about 5 minutes for each image. Witten and his father decided that a four and a half minute transmission time and a 1024 x 1024 pixel image resolution would be acceptable for a system that a small hospital could install for about $20,000.

Constructing a tele-radiography system from generic multipurpose computer equipment offers other advantages, too. The equipment is available to handle other computer tasks when its not busy with radiography assignments. Productivity software loaded on the computer's hard drive allows the staff to do word processing, spreadsheet calculations, or any other personal computer tasks. At Pershing Memorial Hospital, for example, the staff uses the system's "down time" to keep track of patient procedures and to catalog the hospital's radiography films.

A TYPICAL SYSTEM

Teleradiography system components include film scanner, computer, modem, software and a tele

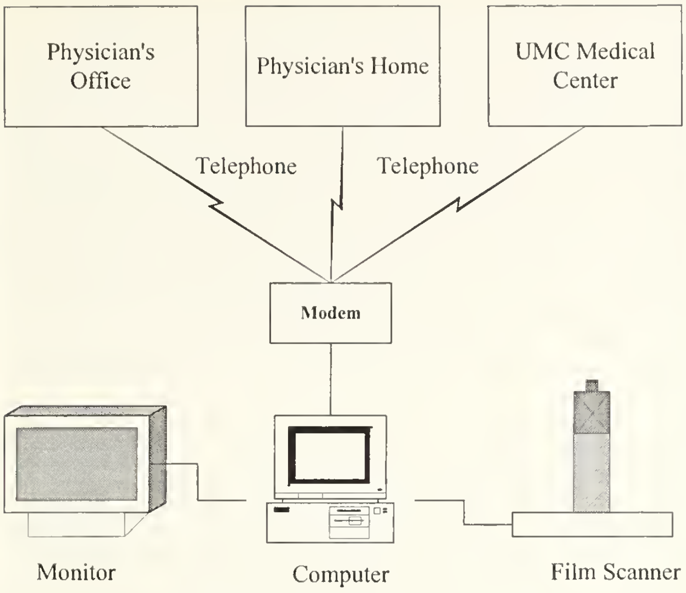

Fig. 5 - Tele-Radiography System Components. This drawing illustrates the components that make up a tele-radiography system. The illustration also demonstrates the numerous locations where a radiograph may be viewed. Once a radiograph has been scanned it can be called up and viewed on any Microsoft Windows™ compatible computer.

phone line. *(see Figure 5)*

FILM SCANNER

A film scanner is a device that is used to scan a radiographic film and break down its visual image into a string of digital bits that the computer can manipulate. A scanner works by dividing an image into millions of dots. A number (based on a black to white scale) is assigned to each dot to represent the lightness or darkness of the dot. A digital file is a complete list of the numbers that represent each dot of the radiograph.

When these dots are shown on a computer monitor's screen they are known as pixels. Resolution is determined by the number of pixels. If one sees more pixels, there is greater resolution and, conversely, fewer pixels equals less image resolution on the monitor. Most scanners on the market today are capable of producing digital image files of up to 4,000 pixels wide x 4,000 pixels high, but radiographic images are usually scanned at lower resolutions of 1,000 x 1,000 pixels.

Image quality and contrast are determined by the number of shades of gray that can be displayed. The range of gray shades is determined by the maximum number that can be assigned to each pixel. That maximum number is based on the ability of the human eye to discriminate between adjacent shades of gray. Beyond 256 shades of gray the human eye begins to lose the ability to discriminate between adjacent shades. For practical reasons, a single "byte" or 8 bit gray scale is used to provide 256 shades of gray.

MODEM

A modem is a device that allows computers to communicate over telephone lines. Many are placed next to the machine, but, increasingly so, modems are installed inside the computer. Modems are designated one from another by how fast they can transmit data. This speed is known as "Baud rate", or bits per second (bps), and the higher the baud rate the faster the transmission. Most modems offer baud rates of between 300 to 9600 bps, with 2400 being a current standard. Modems with a 14,400 bps baud capability are considered exceptionally fast for non-dedicated line use.

The modem's function is to synchronize the data flow so that there is a kind of electronic "handshake" between the sender and receiver machines.

COMPUTER

The computer is the workhorse of a tele-radiography system. The computer operates the scanner, stores the images, manipulates them, and even enhances their quality if necessary. The working speed of a computer can be determined by its chip and megahertz rating. All else being equal, A 586 chip running at 66 mhz will be faster than a 386/33 mhz machine. Since computers process millions of math problems each second, a fast, powerful number cruncher is able to move images around its monitor screen faster.

Software programs stored in the computer allows the radiologist to modify a scanned image. An image can be enhanced by lightening or darkening the picture, improving the contrast or by placing several images side by side for comparison.

MONITOR

The display monitor is a video screen attached to the computer. Monitors come with various color capabilities and in several sizes. Bigger screens can display more pixels and are closer to the original image size. Accordingly, radiologists often prefer to use a larger monitor and adjust the screen for black and white display.

SOFTWARE

Witten's tele-radiography software is compatible with the MS DOS™ operating system and will run on any suitably setup IBM PC™ machine. He has written a MicroSoft Windows™ version that will be available soon. This software allows the viewer to move the images around the screen, enlarge or reduce images, and alter the contrast. The software is mouse driven and can be controlled by "point and click".

Scanner software is necessary only at those stations where the image is generated. Viewing terminals are loaded with only the software needed to capture, store and display the images.

TELEPHONE LINE

Telephone lines are capable of carrying data for voice, video or data messages. Most older lines made of copper carry an analog (measurable pulses of power) signal that encodes data into a digital format that a computer can understand. Newer fiber optic lines operate directly on digital signals and can carry vast amounts of data from one computer to another at the speed of light. The average telephone line is designed to be used for voice transmission. It does not have to be static free because the human ear will filter line noise and still make sense of a conversation. Computers, unfortunately, can not distinguish between a digital message it is receiving and any noise that might be on the line. If there is enough noise, the transmission will be "garbage" or create a break in the data flow that will make the computer think it is done and cause it to shut down before all of the message has been received.

Secure, dedicated, static free lines are not cheap. They are shielded from voltage fluctuations and usually reserved for high speed data transmissions. Telephone companies monitor their lease lines frequently to ensure their integrity.

Personal computer modems compensate for unsecured lines by sending data relatively slowly, pausing often to check the line to make sure the last part of a message has been received before sending the next segment of information. This constant checking and re-checking slows transmission speeds.

CONCLUSION

Tele-radiography and telemedicine are existing technologies that can be used today by doctors in hospitals to improve quality of care and to reduce patient costs. The price of tele-radiography and telemedicine systems continues to fall allowing the technology to become more widely available. Physicians are increasingly aware of the demand for patient centered information and are embracing computer technology as a means to satisfy this demand. Physicians and computer scientists are joining together to develop and improve medical information systems in a new branch of medical science called Medical Informatics. Missouri physicians and researchers are among those leading the way in this scientific domain.

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The Authors:

J. Craig Klimczak, DVM, is a post-Doctoral Fellow in Medical Informatics at the University of Missouri. He is a member and former chair of the American Association of Equine Practitioner's Computer Applications Committee. His current research activities involve analysis of electrocardiograms and automated encoding of computerized patient records. **Joyce A. Mitchell**, PhD, is a Board Certified Medical Geneticist and has served on the faculty at the University since 1980. She was appointed Director of the Medical Informatics Group when it was formed in 1989. She is a member of the board of governors of both the American Medical Informatics Association and the American College of Medical Informatics.

University of Missouri - Columbia

The MU psychiatry and neurology departments are combining their studies of mind and brain. It is the first time a medical school has merged two independent and active departments of psychiatry and neurology into one.

Bernard Beitman, MD, professor and interim chairman of psychiatry, has been appointed chairman of the new department. He has served as interim chairman of psychiatry since 1991 and been a faculty member since 1985.

For the next two years clinical training for medical students in their third and fourth years will be unchanged. As the school adapts a problem-based curriculum over the next four years, psychiatry and neurology training will become more integrated. Separate accrediting groups require that the training programs for resident physicians remain distinct.

Eight alumni and supporters of the MU School of Medicine were honored at the annual awards luncheon, held in conjunction with the MSMA meeting at the Lake of the Ozarks. **Larry E. Millikan, MD,** professor and chairman of dermatology at Tulane University in New Orleans, received the Citation of Merit in recognition of his contributions to medicine. A 1962 graduate, Millikan's clinical and research interests include the biology and immunology of melanoma. As an MU faculty member from 1970 to 1981, he helped develop the Sinclair swine animal model for studying melanoma.

Roland James, MD, of Columbia and **Lee Duncan Hanes, MD,** of Odensburg, NY, received Service Awards for work within their communities. Dr. James, a 1965 graduate is an endocrinologist in private practice. Every summer he volunteers as medical director of the Central Missouri Diabetic Children's Camp. Dr. Hanes, a 1952 graduate of the school's two-year program, has directed the St. Lawrence Psychiatric Center since 1970. She is involved in community activities, state politics and mental health reform.

Frederick S. Gorelick, MD, and **Terry J. Smith, MD,** received Outstanding Young Physician Awards. Dr. Gorelick, a 1973 graduate, is an associate professor of medicine and cell biology in the division of gastroenterology at the Yale School of Medicine. He has made ground-breaking discoveries in the study of pancreatitis and cystic fibrosis. **Terry J. Smith, MD,** a 1975 graduate, is professor of medicine and head of molecular and cellular medicine at Albany Medical College in New York. He in an internationally recognized authority on diseases of the thyroid.

Former MSMA President **Carol Williams, MD,** and MU faculty members **Ezio A. Moscatelli, PhD,** and **Mitchell Rosenholtz, MD,** were named honorary alumni. Dr. Williams, an ob-gyn who practices in a clinic for low-income persons, is the first woman to serve as president of the St. Louis Metropolitan Medical Society. Dr. Moscatelli, professor of biochemistry, has won numerous awards for his teaching including the 1991 William T. Kemper Fellowship for Excellence in Teaching. Dr. Rosenholtz, former assistant dean for student affairs, is a favorite of students who have chosen him repeatedly to participate in investiture ceremonies at commencements.

The first endowed professorship at MU in health services management has been established in honor of the program's founding director, **Thomas P. Weil, PhD.** Dr. Weil was a faculty member from 1966 to 1971 and led in the creation of one of the first health administration education programs to be based in management and business courses and to be linked to a medical school.

St. Louis University

For years it has been believed that body fat increases as a person ages. As a result, older people have been told to control their fat intake. But an extensive study by geriatric researchers has found just the opposite is true.

According to **John E. Morley, MD,** Dammert Professor of gerontology and the director of the division of geriatric medicine, not only does body fat not increase, it decreases in older people. Researchers studied 567 healthy people and found that body fat increases at middle age but then decreases markedly in people over the age of 85.

Malnutrition in the elderly has reached epidemic proportions. Up to 58 percent of nursing home residents suffer from some degree of malnutrition. Up to 22 percent of the patients 70 years old or older who regularly see a doctor are malnourished and about 23 percent of the elderly people in hospitals suffer from malnutrition.

Results from a multi-center, nine-year study show that genetics have a substantial influence on whether a person will experience posttraumatic stress disorder symptoms (PTSD) following a traumatic event.

Leading researchers from St. Louis University School of Public Health; Department of Veterans Affairs Medical Centers in St. Louis and Brockton, Mass.; the VA Cooperative Studies Program Coordinating Center in Hines, Ill; and Washington University School of Medicine studied 4,042 identical and fraternal twins who had served in the military during Vietnam to determine the effect of genetics on the liability for PTSD. After taking into account different combat exposure levels, researchers found that genetic influences account for one-third of the variability in susceptibility to PTSD. No evidence was found that environmental factors shared by twins growing up contributed to the development of the disorder.

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■ **Theodore Cooper, MD,** St. Louis, Missouri, died April 22, 1993, at age 64. Dr. Cooper received his medical degree at St. Louis University in 1954 and doctoral degree in physiology in 1956. A former professor of surgery at St. Louis University, he was chairman and chief executive of the Upjohn Pharmaceutical Company since 1987. Dr. Cooper was a heart surgeon who published over 200 articles and papers. He served as director of the National Heart and Lung Institute at NIH. Dr. Cooper then was assistant secretary of health in the Department of Health, Education and Welfare in the administration of President Gerald Ford. He was involved in shaping government policies on heart disease, nutrition and AIDS. He headed a study of medical technology that recommended giving the Food and Drug Administration expanded authority to supervise medical devices. Dr. Cooper had responsibility for the controversial federal swine flu vaccination program in 1976, which was halted due to concern that the shots may have been linked to cases of paralysis. He also headed a panel of experts appointed by the National Academy of Sciences in 1988, which criticized the absence of federal leadership during President Ronald Reagan's administration in combating the AIDS epidemic. President Reagan offered Dr. Cooper a Cabinet position as secretary of education in 1980. He declined the position because he had begun running the Upjohn company. Dr. Cooper increased the company's research budget and dealt with criticism of Halcion.

■ **William D. Hawker, MD,** Chesterfield, Missouri, died May 7, 1993, at age 80. Dr. Hawker received his medical degree at Washington University in 1938. He served in the Medical Corps of the Army Air Forces during World War II. He began private practice as an obstetrician and gynecologist in Chesterfield in 1938 and retired in the early 1970s. Dr. Hawker headed the Department of Obstetrics and Gynecology and medical education at Deaconess Hospital during the 1960s and 1970s. He was also on staff at old St. Louis City Hospital. Dr. Hawker was a former member of the board of trustees of Planned Parenthood of St. Louis. He was a co-organizer and executive vice president of the Citizens Association for Public Schools in the 1960s. He was also a co-organizer and the first chairman of the Committee on Infant Mortality of the St. Louis Gynecologic Society. Dr. Hawker was a member of the American College of Obstetrics and Gynecologists.

■ **Raymond Litwiller, MD,** Victoria British Columbia, died April 22, 1993, at age 83. Dr. Litwiller received his medical degree at Loyola University in 1945. He practiced medicine in Des Moines and Ames, Iowa, the Panama Canal Zone and Mount Morris, Illinois, before moving to Columbia, Missouri. Dr. Litwiller worked as a physician for Student Health Services at the University of Missouri from 1963 to 1984.

■ **G. Craig Lynch, MD,** Westwood, Missouri, died May 1, 1993, at age 34. Dr. Lynch received his medical degree at the University of North Carolina in 1984. He was an anesthesiologist for the Anesthesia Associates of Kansas City for more than four years. Dr. Lynch was a member of the American Medical Association, the Metropolitan Medical Society of Greater Kansas City, the American, Missouri and Kansas City societies of anesthesiologists.

■ **William R. McPhee, MD,** Kansas City, died April 18, 1993, at age 68. Dr. McPhee received his medical degree at the University of Kansas in 1949. He founded MAWD Medical Laboratories in 1959 and retired as senior partner in 1982. Dr. McPhee was chief of staff at North Kansas City Memorial Hospital. He was a member of the American Society of Clinical Pathologists and past president of the Clay-Platte County Medical Society, the Kansas City Pathologists Society, the Missouri Society of Pathologists and the American Pathology Foundation.

■ **Barbara E. Russell, MD,** Rolla, Missouri, died April 5, 1993, at age 71. Dr. Russell received her medical degree at the University of Kansas in 1950. She practiced general medicine and pediatrics in Rolla since 1951. Dr. Russell was a member of the board of trustees of the Phelps County Regional Medical Center and served on the board for the Developmentally Disabled for Phelps County. She was a former chief of staff of Phelps County Memorial Hospital, a fellow of the American Academy of Pediatrics and of the Missouri Chapter of the Academy of Pediatrics. Dr. Russell was a clinical instructor of pediatrics at the University of Missouri-Columbia School of Medicine. She was also an advisor in school health policy for Rolla Public Schools, medical director for the Rolla Regional Diagnostic Center from 1967 to 1976 and an examiner for the SAFE network of Missouri.

NEW MEMBERS

❖ **David B. Allen, MD,** 1701 E. Broadway, Columbia, MO 65201, has become member of the Boone County Medical Society. Dr. Allen received his medical degree at the University of Texas in 1984. He completed his residency at Michigan State University. Dr. Allen specializes in surgery.

❖ **Hugh R. Bailey, MD,** 4320 Wornall Rd., Kansas City, MO 64111, has become a member of the Missouri State Medical Association. Dr. Bailey received his medical degree at the University of Kansas in 1972. He completed his residency at the University of Texas Medical Branch, Galveston, TX. Dr. Bailey specializes in dermatology.

❖ **Randy A. Brown, MD,** 4960 Children's Place, St. Louis, MO 63110, has become a member of the Missouri State Medical Association. Dr. Brown received his medical degree at Case Western Reserve University in 1979. He completed his residency at Barnes Hospital. Dr. Brown specializes in internal medicine.

❖ **Curtis D. Burton, MD,** 2727 St. Marys, Hannibal, MO 63401, has become a member of the Northeast Medical Society. Dr. Burton received his medical degree at Oral Roberts University in 1987. He completed his residency at Southern Illinois University. Dr. Burton specializes in orthopedics.

❖ **Galen M. Custer, MD,** 6420 Prospect Ave., Kansas City, MO 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Custer received his medical degree at the University of Kansas in 1975. He completed his residency at Ohio State University. Dr. Custer specializes in internal medicine.

❖ **John P. Dohanich, DO,** 2130 Highway 61 East, Jackson, MO 63755, has become a member of the Cape Girardeau County Area Medical Society. Dr. Dohanich received his doctor of osteopathy at the University of Health Sciences in 1989. He completed his residency at Texas College of Osteopathic Medicine. Dr. Dohanich specializes in family practice.

❖ **Peter B. DelSanto, MD,** 1701 E. Broadway, Suite 3, Columbia, MO 65201, has become a member of the Boone County Medical Society. Dr. DelSanto received his medical degree at the University of Illinois in 1980. He completed his residency at Stamford Hospital, Stamford, CT. Dr. DelSanto specializes in surgery.

❖ **Enrique Dos Santos, MD,** 2800 Forum Blvd, Suite 4B, Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Dos Santos received his medical degree at the Facultad de Ciencias Medicina de la Universidad de Buenos Aires, Argentina, in 1969. He completed his residency at the University of Missouri-Columbia. Dr. Dos Santos specializes in psychiatry.

❖ **Kerry E. Florence, MD,** 200 Madison St., Washington, MO 63090, has become a member of the Franklin-Gasconade-Warren Medical Society. Dr. Florence received his medical degree at Southern Illinois University in 1978. He completed his residency at St. John's Mercy Medical Center. Dr. Florence specializes in emergency medicine and family practice.

❖ **Stephen K. Janney, MD,** 1325 S. Grand, St. Louis, MO 63104, has become a member of the St. Louis Metropolitan Medical Society. Dr. Janney received his medical degree at St. Louis University in 1979. He completed his residency at St. Louis University Hospital. Dr. Janney specializes in internal medicine.

❖ **Khawla B. Khan, MD,** 621 S. New Ballas, St. Louis, MO 63141, has become a member of the Missouri State Medical Association. Dr. Khan received her medical degree at Dow Medical College, Karachi, Pakistan, in 1961. She completed her residency at St. Louis University. Dr. Khan specializes in psychiatry.

❖ **James R. Landgraf, MD,** 2703 Clark Lane, Columbia, MO 65203, has become a member of the Boone County Medical Society. Dr. Landgraf received his medical degree at St. Louis University in 1984. He completed his residency at St. John's Mercy Medical Center. Dr. Landgraf specializes in pathology.

❖ **Ramen E. Newman, MD,** 4400 Broadway, Suite 206, Kansas City, MO 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Newman received his medical degree at the University of South Dakota in 1986. He completed his residency at The Children's Mercy Hospital. Dr. Newman specializes in pediatrics.

❖ **Mark D. Newport, MD,** 3231 S. National Ave., Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Newport received his medical degree at the University of Missouri-Columbia in 1977. He completed his residency at Scott & White Clinic, Temple, TX. Dr. Newport specializes in emergency medicine.

❖ **Christopher M. Ottinger, MD,** 9205 E. 40 Hwy., Independence, MO 64055, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Ottinger received his medical degree at the University of Kansas in

1989. He completed his residency at Kansas University Medical Center. Dr. Ottinger specializes in family practice.

❖ **Joseph Perlow, MD,** 8250 Groby Rd., St. Louis, MO 63132, has become a member of the Missouri State Medical Association. Dr. Perlow received his medical degree at the Chicago Medical School in 1978. He completed his residency at Maimonides Hospital, Brooklyn, NY. Dr. Perlow specializes in general practice.

❖ **Jerrold A. Schermer, MD,** 500 Keene St., Suite 207, Columbia, MO 65201, has become a member of the Boone County Medical Society. Dr. Schermer received his medical degree at Tulane University in 1985. He completed his residency at the University of Tennessee. Dr. Schermer specializes in urology.

❖ **Curtis P. Schreiber, MD,** 3231 S. National, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Schreiber received his medical degree at the Mayo Medical School in 1987. He completed his residency at Mayo Graduate School of Medicine. Dr. Schreiber specializes in neurology.

❖ **John S. Swango, MD,** 3800 S. National, Suite 100, Springfield, MO 65807, has become a member of the Greene County Medical Society. Dr. Swango received his medical degree at the University of Oklahoma in 1986. He completed his residency at Oklahoma Teaching Hospital. Dr. Swango specializes in orthopedics.

❖ **Carlos M. Yu, MD,** 11155 Dunn Rd., 202N, St. Louis, MO 63136, has become a member of the Missouri State Medical Association. Dr. Yu received his medical degree at College of Medicine University of the East, Quezon City, Philippines, in 1982. He completed his residency at St. Louis University. Dr. Yu specializes in neurology.

❖ **Andrew Walker, MD,** 109 Virginia St., Hannibal, MO 63401, has become a member of the Northeast Medical Society. Dr. Walker received his medical degree at St. Louis University in 1988. He completed his residency at St. Louis University. Dr. Walker specializes in anesthesiology.

❖ **Harold A. Williamson, MD,** 3217 S. Providence, Columbia, MO 65212, has become a member of the Boone County Medical Society. Dr. Williamson received his medical degree at Case Western Reserve in 1976. He completed his residency at the University of Minnesota. Dr. Williamson specializes in family practice.

❖ **Steven C. Zweig, MD,** M228 Medical Science Bldg., One Hospital Drive, Columbia, MO 65212, has become a member of the Boone County Medical Society. Dr. Zweig received his medical degree at the University of Missouri-Columbia in 1979. He completed his residency at the University of Missouri-Columbia. Dr. Zweig specializes in family medicine.

RESIDENTS

Craig T. Austin, MD - *Internal Medicine*
Eric K. Baker, MD - *Internal Medicine*
Deepinder S. Bal, MD - *Internal Medicine*
Stephanie L. Barry, MD - *Internal Medicine*
Cathy E. Berenson, MD - *Internal Medicine*
Jennifer P. Bernard, MD - *Internal Medicine*
Lakshmisri Bhattacharjee, MD - *Internal Medicine*
John T. Brunts, MD - *Internal Medicine*
Jodianne T. Carter, MD - *Internal Medicine*
Alice H. Chou, MD - *Internal Medicine*
Eric S. Colton, MD - *Obstetrics & Gynecology*
Diane L. Cornelison, MD - *Internal Medicine*
Bhupesh H. Dihenia, MD - *Internal Medicine*
Laura A. Gaffney, MD - *Internal Medicine*
Amy W. Gemperli, MD - *Internal Medicine*
Dimitri Golfinopoulos, DO - *Internal Medicine*
Bridgette S. Hampton, MD - *Internal Medicine*
Steven J. Hattamer, MD - *Internal Medicine*
Shakira Husain, MD - *Internal Medicine*
Min S. Kang, MD - *Internal Medicine*
Carol E. Kirila, DO - *Internal Medicine*
Eugene Y. Lai, MD - *Internal Medicine*
Phi-Nga M. Le, MD - *Internal Medicine*
Rodney M. Mann, MD - *Internal Medicine*
Robert D. Marvin, MD - *Internal Medicine*
Bradley J. Palmer, DO - *Internal Medicine*
Lynn A. Parker, MD - *Internal Medicine*
Brenda J. Peet, MD - *Internal Medicine*
Rebekah A. Radmanesh, MD - *Internal Medicine*
Venoodhar K. Reddy, MD - *Internal Medicine*
Daniel S. Ring, MD - *Internal Medicine*
Ronald P. Rumpf, MD - *Anesthesiology*
Lisa Marie D. Schrock - *Pediatrics*
Sabato Sisillo, MD - *Internal Medicine*
Heather O. Thomas, MD - *Internal Medicine*
Tara M. Velloff, MD - *Internal Medicine*
Matthew B. Woody, MD - *Internal Medicine*
June Y. Yang, MD - *Internal Medicine*

CME CALENDAR

The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send CME information for listing in *MISSOURI MEDICINE*. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

June

Every week to Oct. 1, 1993. AIDS, Malpractice, OSHA and Medicare. 28 resort-based classrooms. Contact American Educational Institute, Inc., 401 S. Woodward, Suite 333, Birmingham, MI 48009, 800/354-3507, fax 313/433-0615.June

3 & 4 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Advanced Applications in Endoscopic Neurosurgery. 14 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

6 to 11 - *Virginia Beach, VA*: Ninth Annual EVMS Family Medicine Review Course. Contact Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

7 to 9 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part I: Peripheral Nerve. 22 credit hours. Contact the St. Louis University, CME Office at 314/577-8167 or 800/553-2712.

8 & 9 - *St. Louis*: Transesophageal Echocardiography Course. 13 credit hours. Contact Dianne Reid, St. Louis University, 314/577-8897.

10 to 12 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part II: Spine-Microsurgery & Stabilization. 24 credit hours. Contact the St. Louis University, 314/577-8167 or 800/553-2712.

11 & 12 - *Columbia*: Common Chilhood Problems. Contact Barry Kling, University of Missouri-Columbia, Office of Continuing Education, 117 Old Alumni Center, 314/882-4105.

11 & 12 - *St. Louis*: Alzheimer's Disease. Contact Washington University, 314/362-6893 in MO, 800/325-9862 Interstate.

12 - *St. Louis*: Treating Ischemic Stroke. 5 credit hours. Contact St. Louis University, 314/577-8167 or 800/553-2712.

12 to 16 - *Arlington, VA*: Board Review in Family Practice. 41 credit hours. Contact John F. Vargo, George Washington University, 202/994-4285, fax 202-994-1791.

14 - *Springfield*: PALS Recertification Course. 7.5 credit hours. Call Cox South, 417/885-6111.

14 to 19 - *St. Louis*: Practical Anatomy and Surgical Technique Workshop - Neurosurgery Workshops 1993: Part III: Microsurgery of the Brain. 36 credit hours. Contact the St. Louis University, 314/577-8167 or 800/553-2712.

15 to 17 - *St. Louis*: 4th Annual St. Louis Summer Geriatric Institute: The Challenge of Aging Successfully. 17 credit hours. Contact Derry Bowling, 314/894-6510.

17 & 18 - *St. Louis*: State of the Art Symposium on Allergic Diseases. 18.5 credit hours. Contact Washington University, 314/362-6893 in Missouri, 800/325-9862 Interstate.

17 to 20 - *Tan-Tar-A, Lake of the Ozarks*: MAFP 45th Annual Meeting. Over 20 possible CME hours offered. Contact MAFP, 816/747-5114.

18 to 20 - *Lodge of the Four Seasons, Lake of the Ozarks*: Missouri Chapter American College of Surgeons Annual Meeting. Contact Linda Wheelen, 417/869-5222.

19 - *St. Louis*: Alumni/Resident Day 1993. 3.75 credit hours. Contact St. Louis University, 314/577-8261.

20 to 24 - *Columbia*: 15th Annual International Society of Heart Research. Contact Barry Kling, University of Missouri-Columbia, 314/882-4105.

24 to 26 - *St. Louis*: Pediatric Advanced Cardiac and Trauma Support for Life/Pediatric Advanced Life Support Provider Course. 20 credit hours. Contact Mary Beth Foerstel, St. Louis University, CME Office, 314/577-5385.

25 to 27 - *Williamsburg, VA*: Eleventh Summer Symposium in Internal Medicine. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

26 & 27 - *St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course. 16 credit hours. Contact Tina Kunst, St. Louis University, 314/768-1234.

29 & 30 - *St. Louis*: 2nd Annual Symposium: Care of the Head-Injured Patient. 12 credit hours. Contact Sally Lehnert, St. Louis University, 314/577-8919.

July

6 to 10 - *Virginia Beach, VA*: Sixteenth Annual Flap Dissection Workshop. Contact Eastern Virginia Medical School, CME, P.O. Box 1980, Norfolk, VA 23501, 804/446-6140.

9 & 10 - *St. Louis*: Advanced Trauma Life Support Course. 16 credit hours. Contact Mary Keegan, R.N., St. Louis University School of Medicine, 577-8365.

9 to 11 - *Springfield*: ACLS Provider Course. 18 credit hours. Call Donna Willoughby, Cox South, 417-885-4117.

10 & 11 - *St. Louis*: Modern Keratorefractive Surgery: A Safe, Comprehensive Approach to Radial and Astigmatic Keratotomy. 7 credit hours. Contact Dr. Assil, St. Louis University, 314/577-8264.

15 to 17 - *Nashville, TN*: First Annual Mid-South Symposium on Cardiovascular Disease. 18.5 credit hours. Contact Registration Secretary, American College of Cardiology, 9111 Old Georgetown Rd., Bethesda, MD 20814-1699, 800/257-4739.

21 to 25 - *Houston, TX*: 15th National Lesbian and Gay Health Conference and 11th Annual AIDS/HIV Forum. 22 credit hours. Contact John F. Vargo, George Washington University, 202/994-4285, fax 202-994-1791.

22 to 24 - *Kansas City*: Workshop on Stress Echocardiography. 13 credit hours. Contact Beth M. Paul, St. Luke's Hopsital of Kansas City, 816/932-2301, registration deadline 6/22/93.

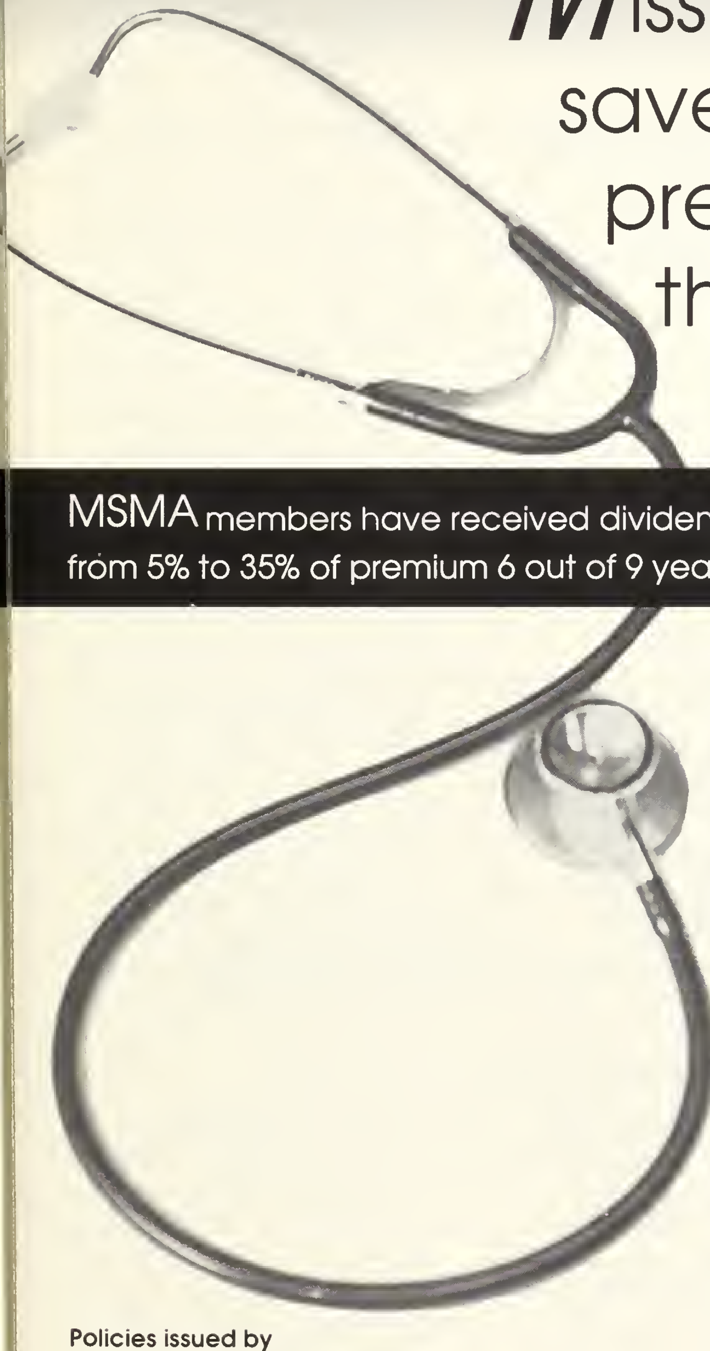
24 & 25 - *Springfield*: Pediatric Advanced Life Support (PALS). 16 credit hours. Call Lisa McFall, 417/885-5400.

26 to 29 - *St. Louis*: Advanced Death Investigation Conference. 19.5 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.

31 to August 1 - *St. Louis*: Advanced Cardiac Life Support Provider/Recertification Course. 16 credit hours. Contact Tina Kunst, St. Louis University 314/768-1234.

August

2 to 5 - *St. Louis*: Master's 5 - Advanced Death Investigation Conference. 20.5 credit hours. Contact Mary Fran Ernst, St. Louis University, 314/522-6410, ext. 6509.



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CHIEF SURGEON - A vacancy exists for a Board Certified Surgeon to serve as Chief of Surgical Service at the Poplar Bluff, MO VA Medical Center. The Poplar Bluff, MO VA Medical Center is dedicated to providing quality patient care. We are presently recruiting for the right physician to join our dedicated staff. We are committed to insuring our Veterans receive the BEST QUALITY of care available. Dr. Rolin Duncan, Chief of Staff, would like to discuss the advantages of working at this Medical Center with a dedicated staff who are as committed to providing the same quality patient care as you. WON'T YOU TAKE SOME TIME TO TALK WITH US, LEARN MORE ABOUT WHAT THE DEPARTMENT OF VETERANS AFFAIRS CAN OFFER IN THE WAY OF SALARY - BENEFITS - QUALITY OF LIFE. Please call Dr. Duncan to find out more about this great opportunity. You may reach him at (314)686-4151, extension 201. If you would like to give us serious consideration as an employer, we would be happy to provide you a complete application packet. JOHN J. PERSHING VA MEDICAL CENTER, 1500 N. Westwood Blvd., Poplar Bluff, MO 63901 An Equal Opportunity Employer.

Announcement

ST. LOUIS VA MEDICAL CENTER & ST. LOUIS UNIVERSITY MEDICAL CENTER ANNOUNCE A SYMPOSIUM ON:

Total Quality Management:
Improving Geriatric Care
for the 21st Century
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St. Louis University, St. Louis, Missouri

The objectives of this symposium are to (1) develop a consensus statement on priority areas for quality improvement of care of elderly persons in community, hospital, and long-term care settings and (2) evaluate methods for achieving quality improvement in those areas with emphasis on total quality management. Information will be provided by nationally and internationally known experts. For information, contact Conference Secretary, VA Medical Center, GRECC (11G-JB), St. Louis , MO 63125 or telephone FTS 280-6510 or (314) 894-6510.

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RADIATION ONCOLOGIST, Board Certified, 20 years private practice experience, Missouri and Oklahoma medical licenses, wants to do 1-3 week locum tenens starting October 1993. (918)627-8157, P.O. Box 471767, Tulsa, OK 74147-1767.

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PHYSICIAN RECOGNITION AWARDS

The Physician Recognition Award is presented by the Missouri State Medical Association and the American Medical Association to physicians who voluntarily complete 150 hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category I programs.

Boone

Ralph Braunschweig, *Columbia*

Buchanan

Edward H. Andres, *St. Joseph*

Greene

Dan T. Sullivan, *Springfield*
Jasper W. Wakeman, *Springfield*

Perry-Ste. Genevieve

Melquiadito M. Allego, *Perryville*

Metro Med of K.C.

Ali A. Arbab, *Kansas City*
Jo J. Callaway, *Kansas City*
Mario J. Guastello, *Kansas City*
Robert A. Raich, *Kansas City*
William N. Rosenthal, *Kansas City*
Sanford Simon, *Kansas City*
Michael J. Waxman, *Kansas City*
Robert D. Williams, *Kansas City*
Charles H. Zerr, *Independence*

St. Louis Metropolitan

Robert K. Dorton, *St. Louis*
Dominic S. Francisco, *St. Louis*
Grant Izmirlian, *St. Louis*
Carol R. Mischnick, *St. Louis*
Susan K. Reynolds, *Affton*

SEMO

Ronald T. Hill, *Dexter*

LETTER TO THE EDITOR

Dear Editor:

I would first like to make a confession in regards to the Missouri State Medical Association. I have always been somewhat skeptical about the amount of work, and indeed the results of the work done by groups such as the Missouri State Medical Association and the Metropolitan Medical Association.

Initially, when Dr. Jantz asked if I would take his place at the convention, I said I would do it more as a paid vacation than with any idea of contributing on my mind.

However, after arriving at the annual convention, from moment one I was impressed with the commitment to excellence of both the staff and physicians associated with the Missouri State Medical Association. I would like to thank you for opening my eyes and for correcting my cynicism. I found the proceedings extremely interesting and educational, and I can honestly state that I feel much better about the medical world in general, knowing that those in leadership positions are actively advancing my cause. I would very much like to be involved in the future, and I will leave it to your discretion as to what mode I can best be utilized.

Steven K. Bowlin, MD

WANTED: Cover Art

Here at *Missouri Medicine* we take pride in our beautiful covers. You can help us continue our tradition of printing the most colorful and creative covers of all the states' medical journals. We would like to see your photos/paintings of Missouri, animals, birds, flowers, landscapes.

We want your artwork for one of our future covers. Send us a 35mm slide of your work to:

MISSOURI MEDICINE, 113 Madison, P.O. Box 1028, Jefferson City, MO 65102

Call Dennis Weiser or Angela Allen at 314/636-5151 for more information.

INFORMATION FOR CONTRIBUTORS

Articles are accepted for publication on condition that they are contributed solely to this journal. Material appearing in *MISSOURI MEDICINE* is protected by copyright.

Manuscripts should be submitted to the editor, **J. Regan Thomas, MD,** P.O. Box 1028, 113 Madison, Jefferson City, MO 65102. The transmittal letter should designate one author as correspondent and include his or her address and telephone number.

In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: **"In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA."** We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

Manuscripts

Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on floppy disks or diskette using WordPerfect 5.1 or other compatible wordprocessing.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

Illustrations

Illustrations should be glossy prints or drawings in India ink on white paper. They should not be mounted and name of author and figure number should be penciled lightly on the back. Legends should appear on a separate sheet. Printing illustrations in one color (black) is standard. Color may be requested with additional cost being the responsibility of the author.

Legal difficulties may arise from unauthorized use of names, initials or photographs in which individuals can be identified. Permission should be secured from patient or legal guardian and signed duplicate or photostat submitted with such photographs or identification. The Editor and Editorial Board assume no responsibility for the opinions and claims expressed in articles contributed by authors. If citation of an institution related to the article is made, approval of the chief of service should be given in a letter accompanying the article.

Reprints

Reprint order blanks will accompany proof, and will be sent to authors prior to publication.

Editorials

Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing. Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

Deadlines

All material other than scientific should be received prior to the first of the month preceding month of publication.

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Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

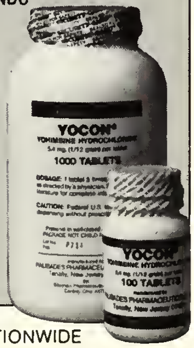
Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



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Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

PRAVACHOL® (Pravastatin Sodium Tablets)

CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and lactation. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Prevastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia. Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SO 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs,* Gem*fibrozil, Niacin (Nicotinic Acid), Erythromycin*: See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine: The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin: In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

Gem*fibrozil:* In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SO 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin, antacids* [1 hour prior to PRAVACHOL (pravastatin sodium)], *cimetidine, nicotinic acid,* or *probucol,* no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro,* with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli,* a forward mutation assay in L5178Y TK +/− mouse lymphoma cells, a chromosomal aberration test in hamster cells, and a gene conversion assay using *Saccharomyces cerevisiae.* In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area ($mg/meter^2$). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: **General**.)

ADVERSE REACTIONS

Pravastatin is generally well tolerated, adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy, this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class.

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

Hypersensitivity Reactions: An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

Gastrointestinal: pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting.

Reproductive: gynecomastia, loss of libido, erectile dysfunction.

Eye: progression of cataracts (lens opacities), ophthalmoplegia.

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

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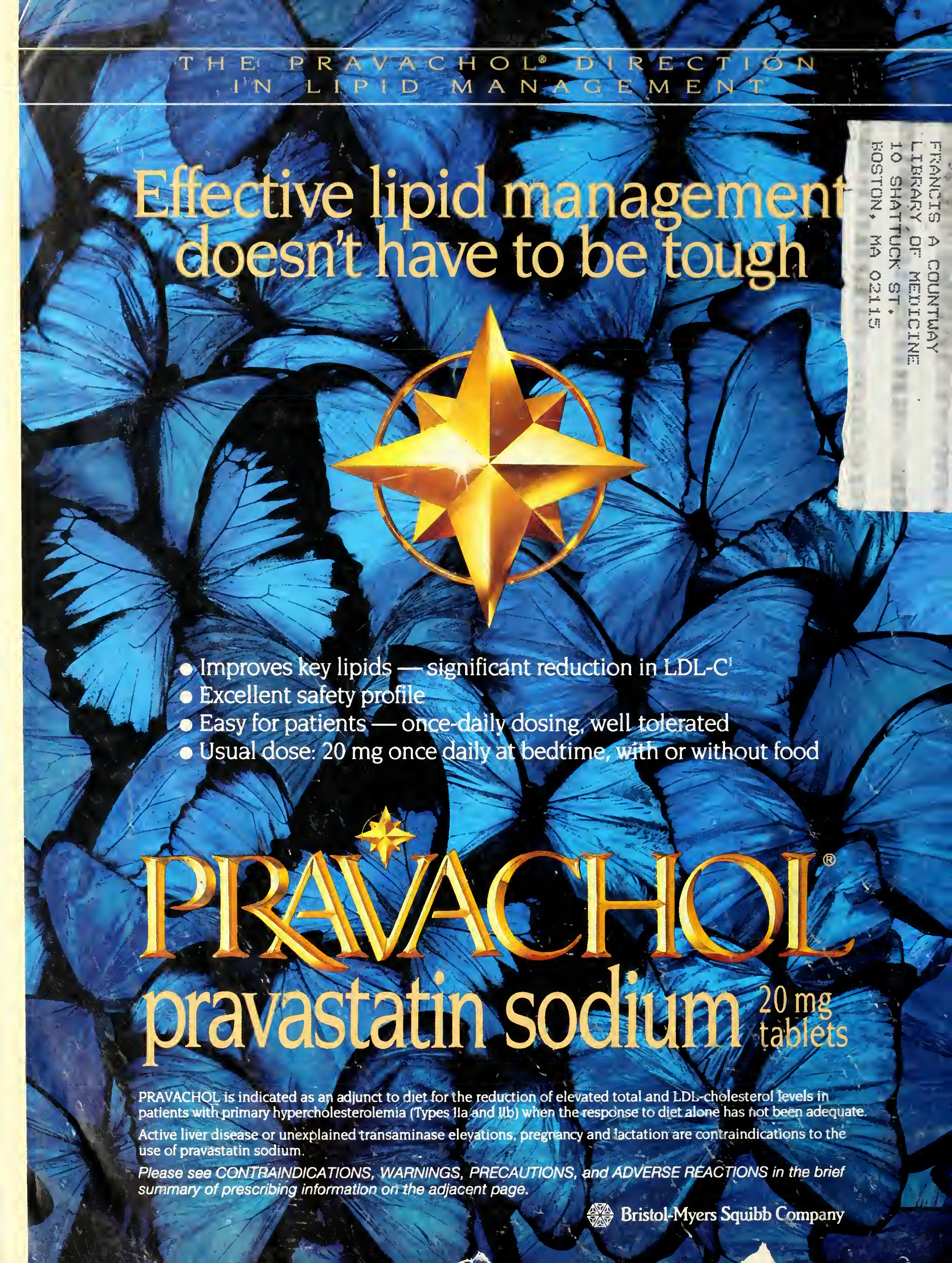

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Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.

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CONTRIBUTING EDITORS
Jordan W. Burkey, MD
Donald G. Sessions, MD
Wilfred E. Wooldridge, MD

MISSOURI STATE MEDICAL ASSOCIATION
Box 1028
113 Madison Street
Jefferson City, Missouri 65102
Phone: 314/636-5151
Fax: 314/636-8552
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Terry L. Martin, art instructor at William Woods College and a longtime contributor of artwork to **Missouri Medicine**, supplied the July cover. The painting is called "Hulen Lake." Martin lives in Fulton, MO.

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Jerry Kennett, MD, *Columbia*
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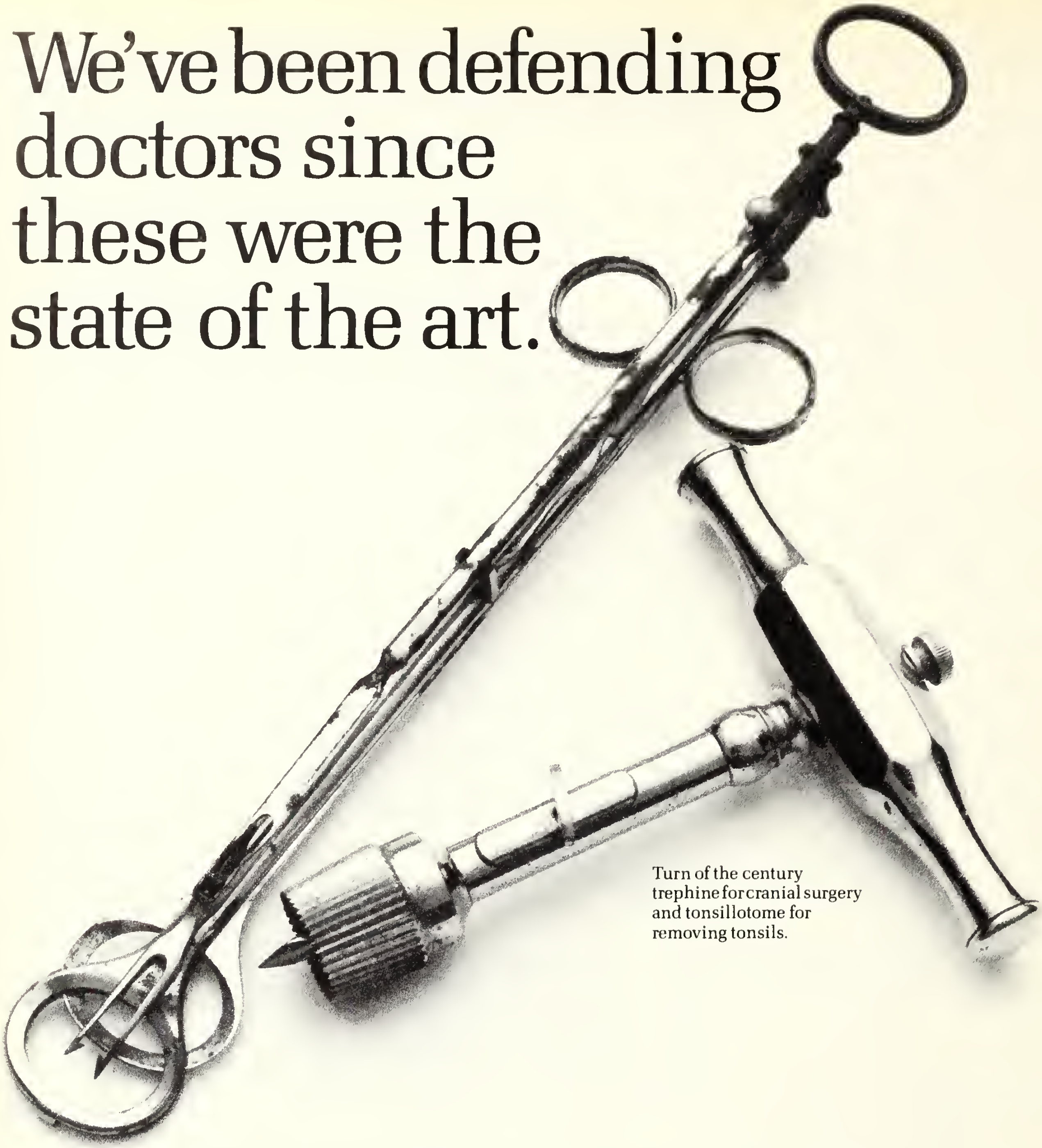

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Columnist punctures bogus survey of physicians' salaries

Few columnists are as enjoyable to read as Mike Royko. He has a unique ability to not only "Say it like it is" but frequently to say it as I wish I had said it. At a time when physician bashing is often a substitute for substantiative innovation in the realm of medical reform, Mr. Royko takes a refreshing look at reality. I hope our readers use this article to enlighten as many of our fellow citizens as possible. It might serve as an excellent insert in your next correspondence to your representatives in Washington and Jefferson City.

J. Regan Thomas, MD, Editor

Poll Reflects Sick Society

Mike Royko

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On a stupidity scale, a recent poll about doctors' earnings is right up there. It almost scored a perfect brain-dead 10.

It was commissioned by some whiny consumers group called Families USA.

The Poll tells us that the majority of Americans believe doctors make too much money.

The pollsters also asked what a fair income would be for physicians. Those polled said, oh, about $80,000 a year would be OK.

How generous. How sporting . How stupid.

Why is this poll stupid? Because it is based on resentment and envy, two emotions that ran hot during the political campaign and are still simmering.

You could conduct the same kind of poll about any group that earns $100,000- plus and get the same results. Since the majority of Americans don't make those bucks, they assume that those who do are stealing it from them.

Maybe the Berlin Wall came down, but don't kid yourself, Karl Marx lives.

It's also stupid because it didn't ask key questions, such as: Do you know how much education and training it takes to become a physician?

If those polled said, no, they didn't know, then they should have been disqualified. If they gave the wrong answers, they should have been dropped. What good are their views on how much a doctor should earn if they don't know what it takes to become a doctor?

Or maybe a question should have been phrased this way: "How much should a person earn if he or she must (a) get excellent grades and a fine educational foundation in high school in order to (b) be accepted by a good college and spend four years taking courses heavy in math, physics, chemistry, and other lab work and maintain a 3.5 average or better, and (c) spend four more years of grinding study in medical school with the third and fourth years in clinical training, working 80 to 100 hours a week, and (d) spend another year as a low-pay, hard work intern, and (e) put in another three to 10 years of post-graduate training, depending on your specialty and (f) maybe wind up $100,000 in debt after medical school and (g) then work a average of 69 hours a week, with many family doctors putting in 70 hours or more until they retire or fall over?"

As you have probably guessed by now, I have considerably more respect for doctors than does the law firm of Clinton and Clinton, and all the lawyers and insurance executives they have called together to remake America's health care.

Continued on next page

Bogus Survey

Continued from page 319

Based on what doctors contribute to society, they are far more useful than the power-happy, ego-tripping, program-spewing, social tinkerers who will probably give us a medical plan that is to health what Clinton's first budget is to frugality.

But propaganda works. And, as the stupid poll indicates, many Americans wrongly believe that profiteering doctors are the major cause of high medical costs. Of course doctors are well compensated. They should be. Americans now live longer than ever. But who is responsible for our longevity - lawyers, Congress, or the guy flipping burgers in a McDonalds?

And the doctors prolong our lives despite our having become a nation of self-indulgent, lard-butted, TV-gaping couch cabbages.

Ah, that is not something you heard President Clinton or Super Spouse talk about during the campaign or since. But instead of trying to turn the medical profession into a villain, they might have been more honest if they had said:

"Let us talk about medical care and one of the biggest problems we have. That problem is you, my fellow American. Yes, you, eating too much and eating the wrong foods; many of you guzzling too much hooch; still puffing away at $2.50 a pack; getting your daily exercise by lumbering from the fridge to the microwave to the couch; doing dope and bringing crack babies into the world; filling the big city emergency rooms with gun-shot victims; engaging in unsafe sex and catching a deadly disease while blaming the world for not finding an instant cure.

"You and your habits, not the doctors, are the single biggest health problem in this country. If anything, it is amazing that the docs keep you alive as long as they do. In fact, I don't understand how they can stand looking at your blubbery bods all day.

"So as your president, I call upon you to stop whining and start living cleanly. Now I must go get myself a triple cheesy-greasy with double fries. Do as I say, not as I do."

But for those who truly believe that doctors are overpaid, there is another solution: Don't use them. That's right. You don't feel well? Then try one of those spine poppers, needle twirlers, or have Rev. Bubba lay his hands upon your head and declare you fit.

Or there is the do-it-yourself approach. You have chest pains? Then sit in front of a mirror, make a slit here, a slit there, and pop in a couple of valves.

You're going to have a kid? Why throw your money at that overpaid sawbones, so he can buy a better car and a bigger house than you will ever have (while paying more in taxes and malpractice insurance than you will ever earn)?

Just have the kid the old-fashioned way. Squat and do it. And if it survives, you can go to the library and find a book on how to give it its shots.

By the way, has anyone ever done a poll on how much pollsters should earn?

A SUPER SCIENTIFIC SURVEY
(Just kidding!)

1. Physicians Make TOO MUCH Money, Right?

☐ **Yes!**

☐ **Absolutely!**

☐ **Boy, Do they rip us off!**

2. How much should Fat Cat Physicians be paid?

☐ **Not as much as they're making now, by golly!**

☐ **About what a Triple A ball player makes?**

☐ **About what other government workers make? (they do work for the government, don't they?)**

3. It's OK to expect excellent health, universal & first class access to care, but at low or no cost, isn't it?

☐ **Of course, dreams come true in America!**

☐ **My dream turned into a nightmare and it's my physician's fault.**

MSMF Annual Meeting 1993

The Annual Meeting of the Missouri State Medical Foundation was called to order by Miles C. Whitener, MD, President. The minutes of the 1992 Annual Meeting were approved as published in the July 1992 issue of *Missouri Medicine*. A motion was made and seconded to re-elect the current officers of the Foundation. The officers of the Foundation for the 1993-1994 term are:

President - Miles C. Whitener, MD, *St. Louis*
Vice President - Frederick W. Hahn, MD, *Kansas City*
Secretary/Treasurer - Robert H. Tanner, MD, *Jefferson City*

The following physicians will serve on the MSMF Board of Trustees:

Patrick B. Harr, MD
Donald Fakhoury, MD
Mary E. S. Case, MD
Robert O. Schaaf, MD
Robert H. Tanner, MD
Christopher H. Jung, MD
Miles C. Whitener, MD
James E. Allan, MD
Frederick W. Hahn, MD

New business addressed how much the Foundation should consider loaning, deferments, and the investment policy. Based on projections prepared using the past ten years as a basis for repayment history, it was decided to fund up to $450,000 in loan requests for the 1993-1994 school year with a maximum of $4,000 per student. The last two years, loans totalled $372,000 and $466,000 for 1991 and 1992 respectively. Three years ago, when $2,000 was the maximum, the Foundation loaned $163,000. It was decided not to grant deferments for specialization in primary care because the Foundation reserves and anticipated future cash flow would not sustain current lending levels.

The Foundation board agreed to change the investment policy to allow investments in stocks or bonds not to exceed two thirds of the portfolio balance. Previously, stocks were not to exceed one half of the portfolio balance.

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135th Annual Convention
Missouri State Medical Association

Tan-Tar-A Resort - Lake of the Ozarks
April 1-4, 1993

FIRST SESSION

The First Session of the MSMA House of Delegates was called to order at 10:00 a.m., Thursday, April 1, 1993, by Speaker of the House James B. Wolfe, Jr, MD. The following officers and delegates were present during the 135th Annual Meeting:

OFFICERS

President	Carol F. Williams, *St. Louis*
President-Elect	Melvin C. Kasten, *Cape Girardeau*
Secretary	Norman P. Knowlton, III, *Springfield*
Treasurer	David Wilkinson, *St. Louis*
Vice President	Harry O. Cole, *Chesterfield*
Vice President	Richardson K. Noback, *Kansas City*
Vice President	Michael J. Bukstein, *Hannibal*
Speaker	James B. Wolfe, *Springfield*
Vice Speaker	Frederick G. Defeo, *Kansas City*

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1st District	Stephen Vilmer, *N. Kansas City*
2nd District	Carl R. Kruse, *Palmyra*
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3rd District	Arturo Montes, *Florissant*
3rd District	Frederick Peterson, *St. Louis*
3rd District	Daniel O'Sullivan, *St. Louis*
3rd District	Meredith Payne, *Chesterfield*
4th District	Sammy L. Farrell, *Washington*
5th District	Jerry Kennett, *Columbia*
5th District	H. Jerry Murrell, *Columbia*
6th District	A. J. Campbell, *Sedalia*
7th District	Steven E. Buie, *Lee's Summit*
7th District	William E. Dorzab, *Kansas City*
7th District	Robert Gibbons, Jr., *Overland Park, KS.*
7th District	Frederick W. Hahn, *Independence*
8th District	David W. Hall, *Rogersville*
8th District	Duane Hellam, *Springfield*
9th District	David O. Barbe, *Mountain Grove*
10th District	William C. Shell, *Sikeston*
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RPS Councilor	Karen D. Zanol, *Columbia*
HMSS Councilor	Charles Barbee, *Columbia*

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2nd District	Robert Tompson, *Moberly*
4th District	Jeffrey Copeland, *St. Charles*
5th District	Robert P. Wankum, *Jefferson City*
6th District	Jerry Meyer, *Concordia*
7th District	Linda Dorzab, *Overland Park, KS.*
9th District	Thomas R. Stubbs, *West Plains*
10th District	Mark C. Kasten, *Cape Girardeau*
Student	Christian Hinrichs, *Kansas City*
RPS Councilor	Robert Swanson, *Chesterfield*
HMSS Councilor	Luis Anglo, *St. Louis*

DELEGATES

First District

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Buchanan	Merlin Brown, *St. Joseph*
Buchanan	James F. Conant, *St. Joseph*
Buchanan	Robert Corder, Jr., *St. Joseph*
Buchanan	B. A. Moranville, *St. Joseph*
Buchanan	Robert Schaaf, *St. Joseph*
Buchanan	Thomas Weigand, *St. Joseph*
Clay-Platte	Nicola Y. Katf, *N. Kansas City*
Clay-Platte	Stephen A. McCray, *N. Kansas City*
Clay-Platte	James L. Stewart, *Kansas City*
Grand River	John Dixon, *Brookfield*
Northwest	James Humphrey, *Mound City*

Second District

Northeast	Sandra J. Ahlum, *Hannibal*
Northeast	Michael Bukstein, *Hannibal*
Northeast	Stephen Halpin, *Hannibal*
Northeast	Edward Plowman, *Hannibal*

Third District

St. Louis Metropolitan	Luis P. Anglo, *St. Louis*
St. Louis Metropolitan	Vernon H. Balster, *St. Louis*
St. Louis Metropolitan	Lawrence J. Billy, *Florissant*
St. Louis Metropolitan	George M. Bohigian, *St. Louis*
St. Louis Metropolitan	Edmond B. Cabbabe, *St. Louis*
St. Louis Metropolitan	Mario A. Coronado, *St. Louis*
St. Louis Metropolitan	Jack L. Croughan, *St. Louis*

St. Louis Metropolitan	Jonathan D. Dehner, *St. Louis*
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St. Louis Metropolitan	V. R. Devineni, *St. Louis*
St. Louis Metropolitan	Daniel C. Fabito, *St. Louis*
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St. Louis Metropolitan	Arthur H. Gale, *St. Louis*
St. Louis Metropolitan	William H. Huffaker, *St. Louis*
St. Louis Metropolitan	Jack Kayes, *St. Louis*
St. Louis Metropolitan	G. Robert Kletzker, *St. Louis*
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St. Louis Metropolitan	K. Lynne Moritz, *St. Louis*
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St. Louis Metropolitan	Ramulu Samudrala, *St. Louis*
St. Louis Metropolitan	William F. Sasser, *St. Louis*
St. Louis Metropolitan	W. P. Schuessler, *St. Louis*
St. Louis Metropolitan	Stephen G. Slocum, *St. Louis*
St. Louis Metropolitan	James J. Spadaro, *St. Louis*
St. Louis Metropolitan	John A. Stith, *St. Louis*
St. Louis Metropolitan	Randall E. Treadwell, *Alton, IL.*
St. Louis Metropolitan	Harvey Walker, Jr., *St. Louis*
St. Louis Metropolitan	Joseph W. West, *St. Louis*
St. Louis Metropolitan	Bruce I. White, *St. Louis*
St. Louis Metropolitan	Miles C. Whitener, *St. Louis*
St. Louis Metropolitan	David L. Wilkinson, *St. Louis*
St. Louis Metropolitan	Martin B. Wice, *St. Louis*
St. Louis Metropolitan	J. Michael Zylka, *St. Louis*

Fourth District

Franklin-Gasconade-Warren	George Workman, *Herman*
St. Charles-Lincoln	Jeffrey Copeland, *St. Charles*
St. Charles-Lincoln	Michael J. Curry, *St. Charles*
St. Charles-Lincoln	Mark Feldman, *St. Charles*

Fifth District

Audrain	Nancy Bunge, *Mexico*
Audrain	Joe Corrado, *Mexico*
Boone	Jeffrey O. Anglen, *Columbia*
Boone	Diane Brukardt, *Columbia*
Boone	James Daly, *Columbia*
Boone	Ted Groshong, *Columbia*
Boone	Richard Heimburger, *Columbia*
Boone	Derek Hughes, *Columbia*
Boone	Maarten Nieuwenhuizen, *Columbia*
Boone	Kenneth Rall, *Columbia*
Boone	C. E. Gene Ridenhour, *Columbia*
Boone	Hugh E. Stephenson, Jr., *Columbia*
Boone	Robert Thomas, *Columbia*
Boone	Kenneth Weston, *Columbia*
Boone	K. P. Zacharias, *Columbi*
Cole	Alan Braun, *Jefferson City*
Cole	Carl Doerhoff, *Jefferson City*
Cole	William Kimlinger, *Jefferson City*
Cole	Robert Wankum, *Jefferson City*

Continued on page 325

The 135th session of the Missouri State Medical Association's House of Delegates opened on April 1, 1993 at the Lake of the Ozarks. One hundred and twelve officers, councilors and delegates were present for the opening session.

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Lake of the Ozarks	James R. Allan, *Eldon*
Lake of the Ozarks	Roger Francis, *Osage Beach*
Lake of the Ozarks	M. R. "Pete" Hayden, *Camdenton*

Sixth District

Lafayette-Ray	Jerry Meyer, *Concordia*
Pettis	Phillip Hornbostel, *Sedalia*
Pettis	Kathryn Roedel, *Sedalia*
West Central	William Haynie, *Butler*
West Central	Gerald Lee, *Kansas City*
West Central	Warren Lovinger, *Nevada*
West Central	L.M. Magruder, *Nevada*
West Central	William Turner, *Nevada*

Seventh District

Metro Med of K.C.	Thomas P. Allen, *Kansas City*
Metro Med of K.C.	Steven K. Bowlin, *Kansas City*
Metro Med of K.C.	William D. Bradshaw, *Kansas City*
Metro Med of K.C.	Barbara N. Buchanan, *Kansas City*
Metro Med of K.C.	Alfred Caruso, *Kansas City*
Metro Med of K.C.	Luke J. Dlabal, Jr., *Independence*
Metro Med of K.C.	Jean H. Ellis, *Independence*
Metro Med of K.C.	John C. Ellis, *Independence*
Metro Med of K.C.	Mark A. Fernandez, *Platte City*
Metro Med of K.C.	Richard B. Michelson, *Kansas City*
Metro Med of K.C.	Peter J.Muelleman, *Kansas City*
Metro Med of K.C.	Carl M. Myers, *Platte City*
Metro Med of K.C.	Gale B. Oleson, *Blue Springs*
Metro Med of K.C.	Wade V. Robinett, *Kansas City*
Metro Med of K.C.	Larry A. Rues, *Kansas City*
Metro Med of K.C.	Carl D. Siegel, *Kansas City*
Metro Med of K.C.	Carl F. Strauss, *Kansas City*
Metro Med of K.C.	Marc K. Taormina, *Independence*
Metro Med of K.C.	Charles W. Van Way, III, *Kansas City*
Metro Med of K.C.	Michael Weaver, *Kansas City*
Metro Med of K.C.	Daniel S. Whitman, *Kansas City*

Eighth District

Greene	Dallas D. Anthony, *Springfield*
Greene	Thomas E. Ashley, *Springfield*
Greene	Mike Clarke, *Springfield*
Greene	Karel A. DeLeeuw, *Springfield*
Greene	Darrel Domann, *Springfield*
Greene	Lee Godwin, *Springfield*
Greene	Charles H'Doubler, *Springfield*
Greene	Michael Gentry, *Springfield*
Greene	Michael Hoeman, *Springfield*
Greene	Norman Knowlton, *Springfield*
Greene	Hal Lurie, *Springfield*
Greene	Marc McCorcle, *Springfield*
Greene	De Armond Moore, *Springfield*

Dr. Coleen Kivlahan, Director of the Department of Health addressed the House.

Greene	Stanley Peterson, *Springfield*
Greene	Arteso Raborar, *Springfield*
Greene	Jim Rogers, *Springfield*
Greene	James Shaeffer, *Springfield*
Greene	Diana Spade, *Springfield*
Greene	Dan Sullivan, *Springfield*
Greene	Norman Wall, *Springfield*
Greene	Arlen Winsky, *Springfield*
Jasper	Clarence Martin, *Joplin*
Jasper	I. Joe Pryor, *Joplin*
Jasper	Howard Roberts, *Joplin*
Jasper	Duane Sherrod, *Joplin*
Ozarks	Paul B. Anderson, *Neosho*
Ozarks	J. L. Bizek, *Aurora*
Ozarks	Ralph A. Schmitz, *Monett*
Webster	T. M. Macdonnell, *Marshfield*

Ninth District

Mid-Missouri	Richard L. Breeden, *Rolla*
Mid-Missouri	Richard H. Matthews, *Rolla*
Mid-Missouri	David A. Shaw, *Rolla*
Mid-Missouri	Shaw P. Wan, *Rolla*
South Central	C. F. Smith, *Willow Springs*

Tenth District

Butler-Wayne-Ripley-Carter	Gene Leroux, *Doniphan*
Butler-Wayne-Ripley-Carter	Ernest Levenson, *Poplar Bluff*
Butler-Wayne-Ripley-Carter	Ina Levenson, *Poplar Bluff*
Butler-Wayne-Ripley-Carter	Ann Peick, *Poplar Bluff*
Butler-Wayne-Ripley-Carter	Gilbert Smith, *Poplar Bluff*
SEMO	Ken Dempsey, *Sikeston*
SEMO	Frank Kroetz, *Sikeston*
SEMO	Fred Thornton, *Sikeston*

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Mineral Area	David Auner, *Ironton*
Mineral Area	Raul Borrego, *Farmington*
Cape Girardeau Area	Jean Chapman, *Cape Girardeau*
Cape Girardeau Area	Scot G. Pringle, *Cape Girardeau*
Cape Girardeau Area	Gregory Tobin, *Cape Girardeau*
Cape Girardeau Area	Thomas C. Sparkman, *Cape Girardeau*
Cape Girardeau Area	Mark C. Kasten, *Cape Girardeau*
Cape Girardeau Area	Theodore Glenn, *Cape Girardeau*
Cape Girardeau Area	W. A. Schroeder, *Cape Girardeau*
Jefferson	Alfred Shaplin, *Ballwin*

Hospital Medical Staff

James C. Redington, Jr., *St. Louis*

Resident Physicians Section

Maria Evans, *Columbia*

Medical Students Section

Washington University	Lee Fox
Missouri University	Douglas Hoff
Washington University	Douglas Pogue
Missouri University	Sarah Vogel

Delegates-At-Large

Speaker	James B. Wolfe, *Springfield*
Vice Speaker	Frederick G. DeFeo, *Kansas City*

Past Presidents

Richard V. Bradley, *St. Louis*
H. Peter Ekern, *Mexico*
Walter A. German, *Springfield*
Howard J. McAlhany, *Springfield*
Andrew McCanse, *Kansas City*
John N. Martin, *St. Joseph*
John I. Matthews, *Jefferson City*
Dorothy D. Reister, *Kansas City*
Marvin A. Singleton, *Joplin*
Ronald A. Youmans, *Kansas City*

Deans of Medical Schools

Lester R. Bryant, *Columbia* (University of Missouri-Columbia School of Medicine)
William Stoneman, *St. Louis* (St. Louis University School of Medicine)

MSMA President Carol Williams, MD, gave the invocation and welcoming remarks. Jonathan Dehner, MD, chair of the Committee on Credentials, reported that seven officers, 26 councilors, and 79 delegates were present. The minutes from the 134th Annual Meeting were approved as published in *Missouri Medicine*, July issue, 1992.

Speaker Wolfe announced the members of various reference committees: Reference Committee A - Stephen A. McCray (Chairman), K. Lynn Moritz, Arteso C. Raborar, Clarence Martin, and Charles W. Van Way, III. Reference Committee B - John L. Rollo (Chairman), Steven K. Bowlin, Carl C. Pearman, Kenneth G. Weston, and Stephen E. Halpin. Reference Committee C - Ann Peick (Chairman), Charles Norland, Phillip Hornbostel, William Haynie, and Jeffrey G. Copeland.

Dr. Williams addressed the House. Her remarks appear on page 335 of this issue. President-Elect, Dr. Melvin C. Kasten, was invited to give his remarks, see page 332. Then MSMA Auxiliary President Marge Perkins addressed the House. Her remarks appear on page 336 of this issue.

Following her address, Marge Perkins asked Dr. Williams to assist her in distributing the AMA-ERF checks to the four Missouri medical schools. Dr. Daniel Whitman, Associate Professor of Medicine, accepted the checks for the University of Missouri - Kansas City School of Medicine. UMKC received $2,600 in contributions to the Medical Student Assistance Fund, and $1,700 in contributions to the Medical School Excellence Fund. Dr. Hugh Stephenson accepted contribu-

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MSMA President Dr. Carol Williams presented Dr. Ronald James with the Citizenship and Community Service Award for his work with diabetic children.

tions for the Missouri University School of Medicine at Columbia. MU received $7,500 for the Medical Student Assistance, and $4,200 toward Medical School Excellence. Dr. William Stoneman III, Dean of the St. Louis University School of Medicine received $12,500 from the Medical Student Assistance Grant, and $8,700 from the Medical School Excellence Fund. Dr. Edwin Dodson, Associate Dean for Admissions at Washington University School of Medicine received $5,000 for Medical Student Assistance, and $4,200 for Medical School Excellence contributions.

Dr. Williams presented the MSMA Citizenship and Community Service Award to Dr. Ronald James. Dr. James, an endocrinologist and diabetologist, received the award for his service to children and young people who have diabetes. In 1974, he founded Camp Hickory Hill, a summer camp for children with diabetes, which is situated northwest of Columbia. Each July nearly a hundred children from around the state come to Camp Hickory Hill to have fun and also to learn how to manage their diabetes.

Dr. Williams then introduced guest speaker Dr. Raymond Scalettar. Dr. Scalettar, chair of the AMA Board of Trustees, is a practicing internist and rheumatologist in Washington, D.C.

Following Dr. Scalettar's remarks, Vice-Speaker Frederick DeFeo, MD, announced the Reports of Officers, Committees and Commissions were referred as shown in the Delegates' Handbook. Supplemental reports were given by Dr. Hart on the Missouri Patient Care Review Foundation, Dr. Kasten on MMPAC, and Dr. Bradley on MOMEDICO, during which he presented Dr. Croughan with a check for $5,000 for the Missouri Physicians Health Program. The Supplemental Report of the Council was referred to Reference Committee B.

Dr. Williams appointed the following members to the Nominating Committee for 1993:

First District: James F. Conant
Second District: Ed Plowman
Third District: Arthur Gale
Fourth District: Jeffrey Copeland
Fifth District: Hugh Stephenson, Jr.
Sixth District: Jerry Meyer
Seventh District: Carl Myers
Eighth District: Walter German
Ninth District: Joseph Wall
Tenth District: Tom Sparkman
Hospital Medical Staff Section: James Redington
Medical Student Section: Douglas Pogue
Resident Physician Section: Maria Evans

Dr. Walter German was appointed chairman of the committee.

Vice-Speaker DeFeo presented a courtesy resolution on the 62 deceased members and asked all to stand for a moment of silence in their memory.

Speaker Wolfe called attention to the 31 resolutions listed in the delegate's handbooks, the five resolutions received after deadline, and the late resolutions to be approved by House two-thirds majority vote. The resolutions were accepted by the House.

Dr. Raymond Scalettar, member of the AMA Board of Trustees, addressed the House concerning the Clinton administration's Health Care Task Force.

Following announcements and a report by Dr. Kivlahan concerning the Missouri Department of Health, the First Session of the MSMA House of Delegates was adjourned.

SECOND SESSION

The Second Session of the House of Delegates was called to order by Speaker Wolfe at 4 p.m, Friday, April 2, 1993.

Dr. Jonathan Dehner gave the Report of the Committee on Credentials stating that 7 officers, 28 councilors, and 166 delegates were present.

Dr. Williams presented the legislative awards to MSMA Past President Senator Dr. Marvin Singleton (32nd District), Senator Danny Staples (20th District), Representative Don Koller (153rd District), and Representative Dr. Tommy Macdonnell (140th District). Awards were also given to Representative Carl Vogel (114th District) and Representative Dennis Ziegenhorn (160th District) who were unable to attend.

Following the awards presentation, Dr. Thomas C. Rowland, Southern Medical Association President, addressed the House.

Dr. Walter German then gave the report of the Nominating Committee submitting the following members as officers for the ensuing year to the House of Delegates:

Continued on page 328

Continued from page 327

President-Elect: Jerry Murrell, *Columbia*
First Vice President: Thomas Sparkman, *Cape Girardeau*
Second Vice President: Jonathan Dehner, *St. Louis*
Third Vice President: Diane Brukhardt, *Columbia*
Speaker of the House: James Wolfe, *Springfield*
Vice Speaker of the House: Frederick DeFeo, *Kansas City*
AMA Delegates: Robert Gibbons, *Kansas City*
William Huffaker, *St. Louis*
Melvin Kasten, *Cape Girardeau*
Alternate AMA Delegates: Peter Ekern, *Mexico*
David Hall, *Springfield*
Mary L. Vest, *St. Louis*

Larry Rues, Kansas City will fill the vacancy of Robert Gibbons.

The Reports of the Reference Committees were then given.

Reference Committee A

Dr. McCray presented the report of Reference Committee A. The following items were placed on the consent calendar:

Report of the Committee on Constitution and Bylaws
Resolution No. 27 Driving While Intoxicated - Strengthening and Enforcement of Current Legislation
Resolution No. 28 Use of Polycarbonate Clear Face Guards Worn by All Baseball Players in Organized Baseball, Ages 5 -14
Resolution No. 30 Principles for Medical Tort Reform
Resolution No. 40 Prohibit Third Party Payers from Requiring Professional Liability Coverage Beyond State Mandated Limits

The consent calendar was adopted by the House.

Reference Committee A

The Committee then made recommendations on the following resolutions:

Resolution No. 1 Definition of the Practice of Medicine
Resolution No. 4 MSMA Position on The Giving of Expert Medical Testimony
Resolution No. 5 MSMA Position on a Legal Definition of Practice of Medicine
Resolution No. 6 MSMA Priority Issue List
Resolution No. 7 MSMA Position Regarding Smoke-Free Workplace Law
Resolution No. 8 MSMA Position on Physician Choice Under Workers' Compensation
Resolution No. 17 MSMA Position on Nurse Practitioners
Resolution No. 18 Physician-Nurse Practitioner Relationship
Resolution No. 20 Insurance Claims Timely Payment
Resolution No. 21 Automobile Seizure and Forfeiture Law
Resolution No. 26 Improper Use of DEA Registration Numbers
Resolution No. 29 Continue Tort Reform
Resolution No. 31 Department of Health Rules and Regulations for Mammography Services
Resolution No. 41 Encouraging Availability of Indigent Care

Reference Committee C

Ann Peick, M.D., presented the report of Reference Committee C. The following items were placed on the consent calendar:
Report of the Commission on Continuing Education and Health Manpower
Report of the Committee on Continuing Medical Education
Report of the MSMA Commission on Medical Economics, Third Party Medicine, and Governmental Relations
Resolution No. 10 MSMA Position on the Minimum Data Set
Resolution No. 23 Reimbursement by Hourly Rate

The consent calendar was adopted by the House. The Committee then made recommendations on the following resolutions:

Resolution No. 9 MSMA Position on Mental Health Screening Forms for Nursing Home Admission
Resolution No. 11 MSMA Position Against Mandatory Electronic Claims Submission
Resolution No. 12 MSMA Position on Three-Day Acute Hospitalization Prerequisite for Skilled Nursing Care Coverage
Resolution No. 13 MOPS Inequities
Resolution No. 14 Glucose Testing Should be a Waivered Test

Continued on page 330

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(Left) MSMA Auxiliary President for 1993-1994, Elizabeth Huffaker, (Right) 1992-1993 MSMAA President Marge Perkins with guest AMAA President Priscilla Gerber (Center).

Resolution No. 15 Medicaid Reimbursement for Office Visits
Resolution No. 16 Medical Care Provided to Medicaid Patients
Resolution No. 19 Reciprocal Agreements for Reimbursement for Medical Costs
Resolution 22 Rural Hospital Exemption from Medicaid Hospital Tax
Resolution No. 37 Inappropriate Designation of Observation/Admission Status
Resolution No. 39 The Patient's Right to Choose Their Physician
Resolution No. 42 Commission on Office Laboratory Accreditation (COLA)

Reference Committee B

John Rollo, M.D., presented the report of Reference Committee B. The following items were placed on the consent calendar:

Report of the President
Report of the MSMA Auxiliary
Report of the Committee on Legislative Affairs
Report of the Commission on Public Affairs
Report of the Secretary
Report of the Treasurer—MSMA Financial Statement
Report of the Council on Ethical and Judicial Affairs
Report of the Executive Vice President
Council Minutes (with the exception of March 31)
Report of the Missouri State Medical Foundation—MSMF Financial Statement
Report of Physician Health Committee—PHF financial statement
Report of the Commission on Interspeciality Medicine
Report of the Committee on Publication

The consent calendar was adopted. The Supplemental Report of the Council meeting of March 31, 1993, which included two items referred to the standing Committee on Constitution and Bylaws, was then adopted by the House. The Committee then made recommendations on the following resolutions:

Resolution No. 2 Speakers at MSMA Reference Committee Meetings
Resolution No. 3 Primary Care Physician Shortage
Resolution No. 24 Publish MSMA Council Minutes in *Missouri Medicine*
Resolution No. 25 Incorporate *Progress Notes* into *Missouri Medicine*
Resolution No. 32 Statewide Peer Review for Hospital Adverse Action
Resolution No. 33 Distribution of Revised MSMA Model Medical Staff Bylaws
Resolution No. 34 Prohibition of Economic Credentialing and Contracting
Resolution No. 35 Criteria Employed for Hospital Credentialing
Resolution No. 36 Practical Suggestions to MSMA Members Adopted on Economic Credentialing
Resolution No. 38 MSMA Liaison with Missouri Association for Agriculture, Biomedical Research and Education

Seeing no further unfinished business before the House, Speaker DeFeo made a few announcements and adjourned the second session of MSMA.

THIRD SESSION

The Third Session of the MSMA House of Delegates was called to order by Speaker Wolfe at 7:45 a.m., Sunday, April 4, 1993. Dr. Jonathan Dehner gave the Report of the Committee on Credentials, stating that 7 officers, 28 councilors and 138 delegates were present. The report was adopted.

The first item on the agenda was the election of officers. These individuals were presented by the Nominating Committee during the Second Session (see page 328 for complete list). President-Elect Jerry Murrell, MD, and the remainder of the slate of officers were elected.

The amendments to the Constitution and Bylaws which were presented during the Second Session were adopted.

Norman P. Knowlton, III, MD, gave the Report of the Election of Councilors and Vice Councilors. These elections were held in the respective caucuses:

Second District:	Carl Kruse, Councilor
	Lent Johnson, Vice-Councilor
Third District:	Gordon Goldman, Councilor
	Robert Miller, Councilor
	Arturo Montes, Councilor

Meredith Payne, Councilor
Fourth District: Sammy L. Farrell, Councilor
Jeffrey Copeland, Vice-Councilor
Fifth District: Robert Wankum, Councilor
Joe Corrado, Vice-Councilor
Sixth District: A. J. Campbell, Councilor
Jerry Meyer, Vice-Councilor
Seventh District: Frederick Hahn, Jr., Councilor
Steven Buie, Councilor
Eighth District: David W. Hall, Councilor
Clarence Martin, Vice-Councilor
Tenth District: William Shell, Councilor
Mark Kasten, Vice-Councilor
Hospital Medical Staff Section: Charles Barbee, Councilor
Luis Anglo, Vice-Councilor
Resident Physician Section: Maria Evans, Councilor
Robert Swanson, Vice-Councilor
Medical Student Section: Chris Hinrichs, Councilor
Samuel Hughes, Vice-Councilor

After those elected had taken an oath of office Dr. Mel Kasten announced his appointments of Committee and Commission chairmen. (A complete list of all MSMA standing Committees and Commissions will appear in the August Directory issue of *Missouri Medicine*.)

Committee on Legislative Affairs
H. Jerry Murrell, *Columbia*
Physicians' Health Committee
Thomas Anderson, *Columbia*
Committee on Planning
Victoria Gunn, *Jefferson City*
Commission on Continuing Education and Health Manpower
Michael W. Vannier, *St. Louis*
Commission on Medical Economics, Third Party Medicine & Governmental Relations
James T. Rogers, *Springfield*
Commission on Medical-Legal Affairs
O. Gerald Orth, *Columbia*
Commission on Public Affairs
Daniel J. Brennan, *St. Louis*
Publications Committee
J. Regan Thomas, *St. Louis*
Commission on Interspeciality Medicine
Stephen McCray, *North Kansas City*
Young Physicians Committee
Phillip M. Hornbostel, *Sedalia*

The House of Delegates approved a five-year term for T. J. Cooper, *St. Louis*, to the **Council on Ethical and Judicial Affairs.**

MISSOURI STATE
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Immediate-Past President Dr. Carol Williams presented newly inaugurated Dr. Melvin Kasten with a gift she hoped would serve as a symbol of his term as president.

Vice-Speaker DeFeo announced that the 136th Annual Convention will be April 6 to 10, 1994, Crown Center Hotel, Kansas City. The 137th Annual Convention, March 29 to April 2, 1995, will be held at the Adams Mark, St. Louis. The 138th Annual Convention, April 10 to 14, 1996, Tan-Tar-A, Lake of the Ozarks. The 139th, in 1997 will be held at Kansas City. An invitation was extended to hold the 1998 Annual Convention in St. Louis.

Following announcements, Vice-Speaker DeFeo adjourned the House of Delegates of the 135th Annual Convention.

Editor's Note: Complete minutes for the 135th Annual Convention are on file at the MSMA Headquarters, 113 Madison, Jefferson City, Missouri. Any MSMA member interested in viewing the complete report may do so at the MSMA Office.

The Challenge of Change

Melvin C. Kasten, MD, MSMA President

Dr. Mel Kasten, 1993-1994 MSMA President

It is with great humility, but great pride that I assume the Presidency of this worthy association.

It has been my honor to have served with you for so many years. You who are some of the finest physicians in the country and some of the finest friends one could ever have. But what a year!!! It's the toughest of times for medicine, the challenges are enormous so it is vital that we as the leaders in medicine "keep our heads even when all around us is chaos."

"These are the times that try men's souls," Thomas Payne wrote in 1780 of the nation's political future. The same can be said today in medicine in 1990 when both the state of politics and medicine are in disharmony. But the nation has survived, and medicine can survive also if we get involved in the process. If we get involved, invest our time and energy in seeking creative solutions to problems we can affect and influence change.

Since my history in medicine has been longer than many of yours...maybe even most, I have the yearning to "go back," occasionally, but we all know there is no "going back."

What has happened to medical care? As I look back to the fifties, there were no beepers, no Cat Scans, no MRI's, no emergency room physicians. We didn't have Medicare or Medicaid. We took care of our patients hoping to be paid but knowing there would be many never from whom we would receive a thing. We don't have charity hospitals now in which many of us were well trained and patients received good care in.

But we as individuals and as an association can and must meet the **Challenge of Change** of today. Controlling where we can. Contributing and give credibility to change. We must be convincing, conscientiously, and creatively seeking solutions toward the positive direction we want to see medicine take in these turbulent times.

One way to meet the challenge of change is that we need to make more efforts in building relationships between the physicians and his/her legislators both on national and state levels. How do we build together? Well, we do it on state levels with our P.I.P. program. This needs to keep growing and improving. We need all of you to suggest ways of improving. Another way we need to pursue legislative liaisons is with our key contact. Key contact doctors must be versed in the entire legislative process (not just the medical issues). And on the national level, we must not allow the cost containment to be at the expense of our patients. What a challenge!!

The more we hear politicians and pundits talk about health system reform, the more I realize that the one voice they don't hear anymore is the voice of our patients. The needs of the patients seem to have been drowned out by Washington insiders clamoring over "global budgets" and "national health boards."

This hasn't always been the case. Only a few months ago (during the election) the debate centered on making sure every American receives the best quality of care possible.

But as the recession lingered and the national debt rose, the focus shifted from what the fiscal planners wanted.

Every day the headlines tell the story: Health system reform is linked to economic recovery and deficit reduction. Financial considerations are beginning to overwhelm medical concerns. Caught in the middle are the patients, anxious about receiving the best care possible, and frightened that it will all be denied.

I, as a member of the American Medical Association, believe that **meaningful health system reform begins and ends in the free and open marketplace,** not in the hands of **government price fixers and budget-obsessed bureaucrats**.

Like hundreds of thousands of other doctors, I also believe that Health Access America, the AMA's proposal to improve our health care system, does answer the questions of cost, quality and access that are at the heart of our national dilemma.

Some of the highlights that the AMA suggest we do are:

1. Preserve and protect the right of every American to receive the world's highest level of medical care. Quality must not be sacrificed for short-term political or economic gain. (I make this point over and over but this needs to be our total motive.)

2. In partnership with the AMA, establish a national public/private health advisory group to formulate policies to improve the delivery of health care while reining in costs. (On local levels we need to do this.)

3. Require all employers to provide coverage for all employees and their dependents. Risk pools would cover the unemployed and the uninsurable. Government programs would expand to cover the poor.

4. Contain costs through insurance reforms, cutting administrative costs and streamlining procedures. Disclose doctor and hospital fees before services are provided. Promote competition among insurers and providers where market forces, not government decree, curb spending. Much of these directions are being put together with some state incentives and the legislation is being proposed.

5. Allow patients to retain the freedom to choose the type and cost of the coverage.

6. Encourage everyone to assume more responsibility for their own health care decisions while developing healthy lifestyles encouraged by we who are their doctors.

These and other initiatives may help us find solutions to Health Care problems. We know that the media is full of buzz words -- managed competition, spending limits, national health boards, global budget, et al. and these are a prescription that is worse than the illness.

Several members of Dr. Kasten's family gathered for a group photo during a reception following his inaugration. Dr. Kasten is standing at left, wife Mary, son Dr. Mark, and daughter Meg and daughter-in-law Lois are seated.

Managed competition, which is distinct from managed care, refers to a system of health insurance wherein sponsors attempt to effect competition by tying defined contributions to the cost of a least expensive plan providing coverage for atleast a basic set of benefits. In general, managed competition proposals have sought to expand access as well as institute mechanisms for cost control. Employer mandates are common though not universal among managed competition plans.

Reflecting on my trips to Washington D.C. Twice I have been there since January. Once with the hospital and last week with physicians from all over the United States. The same impression came through. We as the primary care givers are being kept totally out of the decisions. It is vital that we be at the table or the system will not work.

From the national focus...and the AMA...initiatives... let's look at what is a little closer to home and some directions that do meet the challenge of change. We know the biggest impediment to give health care and containing the cost is the defensive medicine we must practice. This is no news to any of you.

We know we need to enhance and tighten the tort system and make it responsible for its integrity and honesty. Making the judicial system less condemning , thus less adversarial to the practice of medicine, thus eliminating the need to practice defensive medicine. If we could eliminate defensive medicine, we could save 35.8 billion dollars over the next 5 years.

We cannot affect legislation such as tort system unless we **know and support** legislators (there is a little personal bias here again) and we must fight and be knowledgeable about those legislators we elect. What they stand for...and most of all be their informed sources on what legislative initiative really does as it works out with our patients.

Malpractice suits - money spent on them could be sharply curtailed if cases were settled by "binding arbitration" or other methods such as panels of retired lawyers, retired physicians and citizens who won't profit by the process. This is a direction we are needing to work towards with total commitment. Also, it is my feeling/ belief that we who are "more mature" in medicine/or retired have further obligation to help meet the challenge of change. As **mentors** to our **younger colleagues** - it will take courage to challenge their attitudes, remind them of their commitment to patients first instead of their pocketbooks.

Also, we as professionals need to police ourselves in cases of self-referrals. Organized medicine should be the right defense for examining the issues and taking the proper action.

We as physicians have the responsibility to keep the pressure on the legislatures, the medical schools, and our other colleagues to keep the quality of medical care our utmost priority.

We can do this by trying to affect the caliber and the commitment to the patient of the medical student who enters the profession. Check their desire to really serve people instead of serving their own pocketbooks. To continue to upgrade the knowledge about the effect of the social problems of this day (i.e. crack babies, alcoholism, drug addiction, and AIDS). Curriculum in medical schools must constantly be upgraded on the effect/prevention of the newest problems. Collaboration with social agencies to solve the problems of young children and families whose dysfunction affects us all.

H.L. Mencken once said, "For all the complex problems, there is a simple answer and it is wrong."

The complex problems are that we have created technology we cannot afford and a morality issue we cannot resolve. (i.e. abortion, organ transplants, surrogate parents, quality of life issues, etc.) Who pays? Who is held responsible? Who makes the decisions?

Is the cost of effective medicine a problem we can control? Chronic conditions cause 87% of all deaths but they cause the overwhelming majority of hospital costs in the U.S. (25% of Medicare dollars the last week and 10% of Medicare dollars the last day.)

The problem of cost containment. Some experts say that anywhere from 30 to 50% of the nation's health bills consist of expenditures that produce little or no demonstrable health benefits. We as doctors can determine and limit these costs at a risk, of course, but where do we have immediate chances to change for the better health care delivery.

If we are to reform -- what is now a crisis in health care will become chaos and we're not too far from that now. People need to be educated on the complexity of the crisis. The place we have the most influence for change is in community involvement. The message must go out **loud** and **clear** that we as physicians **do care about citizens** in our cities. Our total family must show the compassionate side of ourselves, to dispel the Mercedes Mercenary models, most often found on the tennis or golf courses. That is the concept they have of us. We as a profession must establish ourselves and regain credibility as "caring doctors." In all areas of community involvement by taking away the concept of the public that our aloofness means that we don't just care about the fee. Our families must begin to be counted as citizens who care...not only about the beautiful things in life, but also about some of the real problems facing all of us. We must, as medical families, understand the problems that people face and show concern and a desire to improve their lives. The most vital and effective place to have this influence is with our very own patients.

Caring first about them, our best chance to control change in medicine is to build better relationships with those who look to us for their care. This is our closest and best way to control the direction in medicine. We should be in close communication with our patients and must have the courage to protect and advocate for them, insisting by example to our more callous colleagues that having good relationships with patients is the #1 best medicine. We must take time to explain to our patients the reasons for the high cost of care, showing them their options -- if we cannot explain and justify the cost, then maybe we had better try to change the cost...this takes courage. The results of not doing this are further deteriorations of our profession.

In conclusion of the longest speech I've ever given...As we meet the **Challenge of Change** trying to give credibility to these changes...The good Lord will forgive me for using HIS format and recommending these 5 Beatitudes:

1. Blessed are they that show compassion for they shall have loyal patients (usually).
2. Blessed are the communicators for their patients shall gain understanding.
3. Blessed are the courageous physicians for they shall see their effects on better health care.
4. Blessed are the physicians who take the characteristics of the Family Physician (compassionate) for they shall be called beloved.
5. Blessed are the physicians who use technology as the tool...not as the substitute for talent -- for that person shall be called a REAL DOCTOR.

Thank you and may God bless you.

"Last April you gave me a canoe paddle ..."

Carol Williams, MD, 1992-1993 MSMA President

Dr. Carol Williams

Symbolically, the paddle summoned up for me a story that had been told on an earlier occasion of two people in a canoe who were struggling to establish a workable communication system between the bow paddler who functions as the pilot and reader of the waters, and the stern paddler who functions as the captain who steers and powers the canoe forward. After several collisions with the bank and the humble recognition by each of them that they couldn't get that canoe, their camping gear and their food safely downstream without the cooperation and efforts of the other, the two of them developed a system of communication that worked. Eventually they enjoyed a great many floats on many Ozark streams. Last spring I read the waters ahead as calling for the elimination of barriers to health care. My travels around the state have been basically to all parts of the state and they have shown me that you, the power and the steering of MSMA, have been wrestling with and doing something about the problems of access for a far longer time and with far greater efforts than I was fully aware of. You, your spouses, and your staffs have been providing care directly to those who could not pay for the care they received and have been advocates for patients when they needed hospital care or other care you could not provide. You have assisted local health departments and community health centers in their provision of basic and preventive health care. Further, though, as the result of continuing ongoing direction from the House of Delegates, MSMA has continued its collaborative efforts to improve access to care by supporting the Health Care Forum's proposal, modeled after the AMA's Health Access America, in the Missouri Legislature. Several of the Health Care Forum's provisions were enacted into law last year. The MSMA has also responded to requests by its members to seek legislation establishing collaborative practice between physicians and advanced practice nurses. Such legislation is embodied in House Bill 564 which is working its way through the legislative process. Collaborative practice will enable the expansion of medical care into underserved rural and urban areas. Access to physicians who will take Workers' Compensation cases will probably not be adversely affected by current bills before the legislature unless fee scales, which have not worked to keep down costs in other states, are adopted. Access to physicians who will accept Workers' Compensation cases is already limited by a provision that was enacted last year which defers physician payment until after the case has been finally adjudicated and settled. This may take years. A major unresolved issue for MSMA is the geographic adjustment factor by which Medicare reimburses urban physicians at a higher rate than rural physicians. The GAF pits urban against rural physicians and drives an inter-professional wedge which has not been dislodged this year despite the 1992 House of Delegates resolution calling for its removal.

Urban physicians have failed to agree to the income cuts the elimination of the GAF would entail for them. It appears somewhat as if the physicians are using their paddles against each other instead of keeping the paddles in the water.

This is the stream we have come down this year. The waters have been confusing to read and we have hit some snags, but the Association has stayed in the current, has not swamped, and continues to meet the challenges as they appear around the next bend of the river.

It has been an honor and a privilege to serve as your president in the past year. I look forward to continuing to serve MSMA in the House of Delegates. Thank you.

* * *

Editor's Note: This year's legislative session proved more successful than anyone dared hope when Dr. Williams spoke at the Annual Meeting. Speaker of the House Griffin's Bill 564 did pass and Senate Bill 251 (Workers' Comp) passed, but without a fee schedule provision and with a correction of last year's patient billing provision. Nice paddling MSMA!

Go For(e) It MSMA!

Marge Perkins
1992 - 1993 MSMAA President

Mr. Speaker, Dr. Williams, Dr. Scalettar, Delegates and Guests: It is a pleasure for me to bring the report of the Missouri State Medical Association Auxiliary to you this morning. A year ago I accepted the honor and responsibility of the presidency of the Missouri State Medical Association Auxiliary. At that time I chose as my theme **"Go For(e) It MSMAA."**

Today I am happy to report to you that we did **Go For(e) It** by adding to our already impressive accomplishments of serving others, improving the quality of life for citizens of Missouri, and representing you, the physicians, as the volunteer arm of medicine.

Invigorating, challenging and rewarding are but a few of the adjectives used to describe the many projects the Auxilians have done this year. Just like that golf game, we hit long drives, crisp iron shots, chipped close, and sank a lot of putts.

We drove for members in many different ways. One big way was that Cole County and Greene County changed their name from Auxiliary to Alliance in order to attract more male and career-oriented spouses. In fact, tomorrow in our House of Delegates, we will vote to see if we should become the Missouri State Medical Association Alliance.

The AMA Auxiliary will become the AMA Alliance this June. While the name change has not had a big impact on the membership as yet, we certainly hope that it does in the near future.

Throughout this year I was pleased to be asked to speak on the benefits of membership at the Hannibal Medical Society meeting, the St. Charles-Lincoln County Medical Society, and the Audrain County Medical Society meeting.

I also spoke to the Jefferson Memorial Hospital doctors' spouses at a luncheon. I think some interest was sparked or rekindled.

Won't those of you in those counties actively recruit your spouse to become a member of the Auxiliary? Won't all of you recruit your spouse to become an Auxiliary member?

We still have only a small percentage of your members as members of the Auxiliary. We need your help.

Hitting crisp iron shots was the strongest point of our game, that is, carrying out our health projects. Our statewide focus this year was the campaign against family violence. We asked you to join the AMA and the AMA Auxiliary to recognize abuse and report it.

We also gathered the names of places in our communities that would offer help.

Buchanan County helped fix up a women's shelter by painting, sanding and furnishing the rooms.

We continued to distribute *Shaken Baby Syndrome* posters and pamphlets, especially in Johnson, Tri-County, South Central, Saline, Mid-Missouri, Dunklin and Grand River Counties.

Continued on page 357

MSMAA President Marge Perkins, LEFT, with officers of the Southern Medical Association Auxiliary: President Ebba Dunn, Medical Heritage Northern Regional Chairman Eileen Dyer, Breast Cancer Awareness Co-Chairman Janet Campbell and Missouri Vice-Councilor Carol Sparkman.

Committee & Commission Reports

Report of the Committee on Constitution and Bylaws

The Committee on Constitution and Bylaws met via conference call December 4.

The Committee reviewed an amendment to the Bylaws accomplished last April by the MSMA House of Delegates (**Resolution No. 4** [A-92]). This change adds the Immediate Past President to the Executive Committee.

The Committee discussed **Resolution No. 36 (A-92)**, which makes the Young Physicians Committee a standing committee within the Association. The Committee recommended the following amendment (material to be added is underlined):

Chapter VII. Committees and Commissions

Section 1. Standing Committees of the Missouri State Medical Association, the chairmen of which shall be appointed by the Association President unless otherwise provided in these Bylaws, will be as follows:

Executive Committee.
Committee on Constitution and Bylaws.
Committee on Publication.
Committee on Legislative Affairs.
Committee on Planning.
Physicians Health Committee.
Young Physicians Committee.

(intervening paragraphs to remain the same)

The **Young Physicians Committee** shall consist of members of the Association appointed by the President for a term of three years. The Young Physicians Committee shall act as a vehicle for increasing the involvement of young physicians in the membership and activities of the Missouri State Medical Association.

The Committee next considered **Resolution No. 49 (A-92)**, which would set up a new Medical Student Section in the Association. According to the intent of the resolution, the Committee recommended the following amendment to the Bylaws (material to be added is underlined):

Chapter VIII. Medical Student Section

Section 1. Membership. Membership in the section shall be limited to Missouri State Medical Association members who are also students at an accredited medical school in the state of Missouri. The Section shall be the unifying body for the four independent Medical School Component Societies in the state.

Section 2. Governing Council. There shall be a Governing Council of the Medical Student Section to direct the programs and activities of the section, subject to the approval of the MSMA Council.

Section 3. Members of the Governing Council. There shall be five voting members of the Governing Council, consisting of the officers, the Student Councilor and the Student Vice-Councilor.

(a). Officers. The officers of the section shall have the following duties and responsibilities:
(b). Chairman. The Chairman shall preside at the business meetings of the section and at meetings of the Governing Council.
(c). Vice Chairman. The Vice Chairman shall assist the Chairman and preside in the absence of the Chairman or at his/her request.
(d). Secretary-Treasurer. The Secretary-Treasurer shall maintain such records and accounts as may be necessary or advisable for the conduct of the activities of the section.
(e). Councilor and Vice-Councilor. The Councilor and Vice-Councilor shall be elected by the members of his or her Medical School Component Society. The following sequence shall be used in determining the Medical School Component Society from which the Councilor and Vice-Councilor shall be elected on an annual rotating basis: Washington University, St. Louis University, the University of Missouri-Kansas City, the University of Missouri-Columbia.
(f). Delegates. Each Medical School Component Society shall elect two Delegates to represent the Medical Student Section in the MSMA House of Delegates.

Section 4. Term. Governing Council members, including the Councilor and Vice-Councilor, shall serve one-year terms, beginning at the conclusion of the Annual Convention at which they were elected.

Section 5. Vacancies. Any vacancy occurring on the Governing Council shall be filled at the next business meeting of the Section.

Section 6. Section Meeting. There shall be a meeting of

Continued on NEXT PAGE

members of the section held prior to each Annual Meeting of the MSMA House of Delegates.

Section 7. Representatives to the Section meeting. The annual meeting of the Section shall be open to any member of the Medical Student Section.

Section 8. Purposes of the Business Meeting. The purpose of the business meeting shall be:

(a). To hear such reports as may be appropriate.
(b). To consider and vote upon such matters as may properly come before the meeting.
(c). To adopt resolutions for submission by the section to the House of Delegates of the MSMA.
(d). To elect a Chairman, Vice Chairman, and Secretary-Treasurer.
(e). To conduct such other business as may properly come before the meeting.

In addition to the above amendment to the Bylaws, the remaining chapters in the Bylaws shall be renumbered, and all references to "medical school component society(ies)" shall be replaced by the phrase, "Medical Student Section." These changes shall be made in the following places in the Constitution and Bylaws (using the current numbering):

Constitution
Article V and VIII
Bylaws
Chapter I, Sec. 3; Chapter III, Sec. 3; Chapter IV, Sec. 1 & 6; Chapter XIII, Sec. 7.

The Committee then turned to **Resolution No. 53 (A-92),** "Sponsorship of Scientific Papers." At issue is whether non-members of the Association should be included in the published program of scientific presentations (Bylaws, Chapter II, Sec. 3). Although the Committee could see merit in insisting that presenters become members of the Association, the better to support and enhance membership, both physicians agreed that the policy could exclude highly qualified speakers from having their names included in the program. Following some discussion, the Committee members agreed upon the following recommendation for amendment (material to be added is underlined; material to be deleted is bracketed):

Chapter II. General Meetings

Section 3. No person in the active practice of medicine in the State of Missouri shall appear on the program of the Association unless he or she is a member of the Missouri State Medical Association or sponsored by a member. In the latter situation, the paper would be considered that presented by a member.

Both physicians emphasized that they would still want presenters to become members of the Association.

The last item on the Committee's agenda was consideration of the American Medical Association's recent switch from *Sturgis'* to *Davis' Rules of Order* as the parliamentary "bible" governing House of Delegates meetings. The Committee went along with the change, and makes the following recommendation for amendment of the Bylaws (material to be added is underlined; material to be deleted is bracketed):

Chapter XII. Rules of Order

The deliberations of this Association shall be conducted in accordance with usages as defined in [*Sturgis Standard Code of Parliamentary Procedure*] *Davis' Rules of Order*.

J. Michael Zylka - Chairman, Jerold Chaffin, Melvin L. Glazer and Mary J. McCaffree

Report of the Committee on Continuing Medical Education

The Committee on Continuing Medical Education met on July 6, August 8 and December 15, 1992.

The Committee members devoted considerable time and energy in developing the first MSMA Conference on Continuing Medical Education which was held on June 6, 1992. As a result of this conference, the Committee on Continuing Medical Education will be publishing a quarterly CME Newsletter to keep Missouri accredited sponsors of continuing medical education (CME) abreast of the numerous changes that are occurring in continuing medical education.

The Committee members reviewed the Accreditation Council on Continuing Medical Education's (ACCME) Standards for Commercial Support for CME. The ACCME requested each state medical society's committee on continuing medical education review the Standards that will affect accredited providers of CME.

Recommendation: That the MSMA Committee on Continuing Medical Education formally adopt the Standards for Commercial Support for CME.

In accordance with a request from the ACCME, the MSMA staff prepared a Special Survey of Intrastate Accredited Organizations regarding Commercial Support for CME.

The Committee members reviewed and discussed the following reports that were considered during the Annual meeting of the AMA House of Delegates: Protocol for Recognition of State Medical Society Accreditation Programs and the Revisions to the AMA Physician's Recognition Award.

On August 8, Committee members met with the ACCME Committee on Review and Recognition to renew the MSMA accreditation an intrastate accrediting agency for CME activities. The ACCME has awarded the MSMA continued recognition for a period of four years.

The Committee members recommended the following organizations be recognized as an accredited sponsor for CME activities:

Cass Medical Center, *Harrisonville:* 2 year Accreditation

Barnes St. Peters Hospital, *St. Peters*: 3 year Accreditation
St. John's Mercy Hospital, *Washington*: 2 year Accreditation
Bothwell Regional Health Center, *Sedalia*: 2 year Accreditation
Alexian Brothers Hospital, *St. Louis*: 2 year Accreditation
Central Ozarks Continuing Medical Education Foundation, *West Plains*: 2 year Accreditation
Farmington Community Medical Center, *Farmington*: 1 year Provisional
Greene County Medical Society, *Springfield*: 3 year Accreditation
Independence Regional Medical Center, *Independence*: 1 year Provisional
Kansas City Society of Otolaryngology & Ophthalmology, *Kansas City*: 3 year Accreditation
Kansas City Veterans Administration Medical Center, *Kansas City*: 3 year Accreditation
St. Mary's Health Center, *Jefferson City*: 1 year Provisional

Michael W. Vannier - Chairman, Robert B. Brigden, William E. Larson, George A. Evans, Aly Mohsen, Gerald J. Duling, Donald C. Patterson, Kathryn R. Roedel, George X. Trimble, Michael R. Freeman, David S. Martin, York E. Silliman

Report of the Commission on Continuing Education and Health Manpower

The Commission on Continuing Education and Health Manpower met on January 7, 1993.

The Commission on Continuing Education and Health Manpower is responsible for all continuing medical education activities of the Missouri State Medical Association (MSMA).

The MSMA is recognized by the Accreditation Council on Continuing Medical Education as the Missouri accreditor of intra-state sponsors for continuing medical education activities. The MSMA's Committee on Continuing Medical Education has two major functions: (1) Sets Missouri standards and guidelines for the accreditation of CME sponsors and (2) Accredits institutions and organizations providing CME activities.

The MSMA is also recognized as a provider of continuing medical education during the MSMA Annual Convention. This Commission determines the character and scope of the scientific proceeding of the Association for each Annual Convention.

In order to strengthen the MSMA Continuing Medical Education program, the Commission members addressed Essentials 1, 4, 5 and 6.

The Commission members discussed and agreed to review content and organization of the MSMA Annual Convention at least four weeks prior to April 1, 1993.

Immediately following the MSMA Annual Convention, the Commission will evaluate each scientific program to determine whether or not the respective program objectives were met.

Michael W. Vannier - Chairman, Robert B. Brigden, Aly Mohsen, William E. Larsen, George A. Evans, Gerald J. Duling, Donald C. Patterson, William H. Gondring, Kathryn R. Roedel, James K. Ritterbusch, Jr., Turner L. Minnigerode, George X. Trimble, Michael R. Freeman, David S. Martin, and York E. Silliman

Report of the Council on Ethical and Judicial Affairs

In October, 1992 our Council received information form a physician and his attorney concerning a component society's denial of membership and perhaps not allowing the physician adequate due process or correctly following the society's bylaws. The physician and his attorney believed that membership was denied because the physician was foreign born and trained.

Our Council carefully considered all the voluminous background material furnished by the physician and the component medical society. Our Council recommended that the component society again offer the physician an opportunity to reapply for membership. The component society has forwarded the application forms and necessary information on membership to the physician and we consider this a closed incident.

As the judicial authority of the MSMA, our Council stands ready to assist component societies and members.

Ronald A. Youmans - Chairman, E. T. Hansbrough, Hugh E. Stephenson, Jr., Walter A. German and Richard V. Bradley

Report of the Commission on Interspecialty Medicine

The Commission on Interspecialty Medicine met on June 30, 1992 via phone conference.

The Commission members discussed two resolutions that were adopted by the Missouri State Medical Association House of Delegates in April: *Resolution 13, MSMA Position on Removal and/or Repair of Non-Oral Facial Legions by Oral Surgeons* and *Resolution 54, Further Government Intervention.* Commission members agreed to disseminate information regarding these resolutions to their respective members.

The proposed definition of the practice of medicine was discussed. Commission members were informed that MSMA will sponsor workshops throughout Missouri on the new OSHA Regulations that will impact on the practice of medicine.

The specialty representatives were reminded that this Commission is responsible for developing the scientific programming during each MSMA Annual Convention. Commission members reviewed the new planning requirements that will enable MSMA to continue providing Category I CME credit during the Annual Convention.

Each specialty's program chairman was provided with a summary of the participant evaluations for their

1992 scientific programs and asked to provide a rational for the selection of 1993 topics demonstrating a utilization of the evaluation forms and/or member perceived needs. It is vital that specialties demonstrate a linkage between program content and member needs.

Commission members discussed the Clinical Laboratory Improvement Amendments of 1988. Physicians who operate office labs continue to have a lot of unanswered questions. Private laboratories, particularly those doing reference work, are offering a package to assist physicians' laboratories with the CLIA requirements providing that they continue to receive referral work.

Stephen G. Slocum - Chairman; Charles Siegel, Allergy; Bruce Weaver, Anesthesiology; Michael Szewczyk, Emergency Physicians; William Soper, Family Physicians; David Fleming, Internal Medicine; William Crowley, Jr., Neurology; John Oro, Neurosurgery; William Walker, Obstetrics/Gynecology; Joe Sudekum, Orthopaedics; John Ellis, Otolaryngology; Robert Edmonds, Pediatrics; Aly Mohsen, Physical Medicine and Rehabilitation; Gordon Johnson, Pathology; Stephen Soltys, Psychiatry; William B. Webber, Plastic and Reconstructive Surgery; Stephen Phillips, Radiology; Joseph Corrado, M.D., Surgery; Michael Chehval, Urology; and N. Eugene Morrow, Dermatology

Report of the Committee on Legislative Affairs

Your Committee on Legislative Affairs has held five meetings during the past year to analyze, discuss and take positions on the many medically-related proposals that come before the Missouri General Assembly.

Each Session more and more bills that impact directly on our profession and our patients are introduced and considered by the 197 members of the Missouri General Assembly. This Session, the Association has tagged 250 bills to support, oppose, amend or monitor. These, of course, are handled on a priority basis with the most important issues receiving most of our attention.

As the importance of the issues increases, the need for additional MSMA member involvement grows! the groups that are seeking drastic changes in our health care delivery system are strong, well-financed and have the ear of many politicians and the media. If medicine is to continue to keep "reason" in forthcoming proposals, we must have physicians talking with their lawmakers ...telling them that "quality," not just "cost," should determine the direction of any future health care policy. Your committee urges all MSMA members to become knowledgeable and aggressive in representing medicine's views to your Senators and Representative.

Following is a brief outline of some of the more important issues currently being considered by the Missouri Legislature. If you have questions, members of the Committee or Staff are available at this meeting to discuss the issues.

1. HB 564 (Omnibus Health Care Bill) - Our biggest battle here has been to maintain reasonable "collaborative practice" language. After we finally managed to convince the speaker's people to go with our ideas on limiting such practice to "advanced nurses," the Governor's Office got involved and wanted the practice opened up to **all** nurses. This would have included prescribing.

A final meeting where MSMA was represented by Drs. Carol Williams and Steve Buie resulted in a return to language that **even the D.O.'s signed off on**. We are using this proposal to head off attempts by nurses to gain "independent practice" such as in HB755.

Sections expanding the state Legal Expense Fund and enhancing the medical student loan program remain in the bill along with the Medicaid expansion proposals. The bill is funded by a 4-cent increase in tobacco taxes, which brings in about $26 mission and, will be used to attract additional Federal monies. The bill was amended to require the posting of a provider's "top ten procedures" (see later item). There may be a continuing pro-life/pro-choice battle on the entire bill.

2. Explanation of the "Collaborative Practice" in HB 564 -- Section 195.070 says a nurse may administer or dispense a controlled substance. Subsection (H) eliminates the physician/patient relationship language and says a physician can permit others to prescribe according to Section 334.104. Although 334.104 does not mention that advanced nurses cannot prescribe controlled substances, they are prohibited from doing so by Section 195.070.

Looking at 334.104. 1. A physician can enter into a collaborative practice with any nurse, under written protocols, etc., but the nurse cannot prescribe. Under 334.104. 2. A physician can enter into a collaborative practice with an advanced practice nurse and the nurse can prescribe non-controlled substances, again only under written agreement, etc. Under 334.104. 3. The Board of Healing Arts AND the Board of Nursing may **jointly** promulgate rules regulating the use of collaborative practice arrangements. In other words, both **boards** must agree on the same rule for it to go into effect. You will note that physician assistants are not included in the collaborative practice language but can still perform those duties as outlined in their own practice act.

Section 338.198 allows a pharmacist to fill a prescription as directed by a nurse or P.A. acting in accordance with a written agreement with a physician.

3. SB 251 (Worker's Compensation) -- Sen. Matthewson introduced a rather "watered-down" W.C. bill (according to business), that took on more than 25 amendments on the floor. Although the physician fee schedule amendment was distributed for possible introduction, MSMA action discouraged that effort and it was not offered. The bill was beefed up with various cost-containment measures including a more limited "definition of injury," toughens "occupational diseases," requires insurance companies to offer companies safety programs, etc.

The only portions of the bill dealing directly with

State Representative and MSMA member Dr. Tommy Macdonnell received recognition for his legislative efforts to support medicine.

physicians at this time are 287.128, which would penalize anyone in the W.C. program for unlawful activities; 287.129, which prohibits false billing; 287.135, which says managed care organizations must be certified; 287.210, which strengthens the independent medical examiner system and serves to reduce the number of depositions required of a physician; and Section 33, which requires physicians to notify the state if they treat W.C. injuries and the state will then conduct a "survey" of charges, treatment, etc. As you can see, we haven't been hurt much yet!

4. Ban on Self-Referral - As requested by the Council, HB 397/SB 189 were introduced using the wording of AMA Report C on self-referral. We have sent copies to all specialties and several physicians who have requested it. We have asked for comments and a few have responded...most very favorably. A late hearing was scheduled on HB 397 and Dr. Murrell represented MSMA well. Several other groups, especially pharmacists, have expressed favor for the bill. As directed, we have asked that the bills' sponsors not pursue passage this year, but wait to receive additional comment. It is possible that the Legislature will name an Interim Committee to study the issue and come back next Session.

5. Charges for Copies of Medical Records - SB 108 was heard in Committee rather early and Dr. Robert Miller testified for MSMA. So far, the bill remains in Committee, but we still are expected to pursue some type of resolution to the problem of exorbitant charges for copies with representatives of MATA.

6. Board of Healing Arts - SB46, which would penalize those who make malicious reports to the Board, is dead in Committee. Sen. Singleton's bill to permit "retired" physicians to provide free preventative care while paying a lower licensure fee and only having to earn 5 cme hours a year, has been voted Do Pass but is not progressing at this time. Dr. Buie, who expressed opposition to SB 335 earlier, has surveyed physicians in his area and now says our Legislative Committee should support the bill to permit these semi-retired physicians to contribute to the community. He also says there is little need to extend the Legal Expense Fund to free, preventive care if these physicians are not permitted a limited license.

7. Lay Midwives - HB 39 passed the House by an overwhelming 119-36 vote and now awaits Senate action. SB 74 (Lay Midwives) and SB 127 (Nurse Midwives) have both been reported Do Pass by the Senate Public Health Committee...but SB 127 received more favorable Committee votes. We're not sure what this means yet, but we will continue to try to substitute the nurse midwife language for the lay midwife proposal.

8. Physician Data - HB 561, which would require physicians to post a list of their regular charges for their 10 most regularly performed procedures or services in their office, show what they received in payment for several sources, provide a brochure of charges for all services and provide the list to "civic clubs," was opposed by Dr. Robert Miller. Amended language which would only require the posting of charges for the top 10 procedures has been amended onto HB 564. It its present state, it is actually weaker than AMA guidelines recommend. It was expanded from only physicians to include dentists, chiropractors and podiatrists.

HB 190, which would require physicians to provide patients with a written estimate of non-emergency hospital procedures and procedures performed in the physician's office, was originally combined with HB 561 in a Substitute. However, the sponsor agreed to remove that language and, to date, it appears to have lost its impetus.

HB 401, which would have required a hospital to furnish each patient with a list of physicians who would be submitting them a bill, also seems to have lost its steam.

9. Generic Substitution - HB 268/SB 280, which would permit generic substitution, have been heard in Committee and could be added as amendments onto other bills. Sen. Banks is sponsor of SB 280 and is in a position to tack the measure onto another bill.

10. D.W.I. - SB 167, which would strengthen the state D.W.I. laws somewhat, has been voted Do Pass and is awaiting Senate action. Separate bills which would toughen state D.W.I. laws in other areas could be amended onto SB 167.

11. Marijuana - SB 257, which would move marijuana from Schedule I to II and permit a person with certain medical conditions to possess up to 35 grams upon the certification of a physician, has passed the Senate and now goes to the House.

12. Health Access Incentive Fund - HB 246, which would establish a Health Access Incentive Fund o encourage health care providers to locate in areas of need through grants, loans, malpractice insurance payments, etc., has been amended onto HB 564. This bill has been pushed by the Family Physicians and supported by MSMA.

13. Radiologic Technician Licensure - HB 282, which would license radiologic technicians and has a one-year "grandfather clause" for those not meeting licensure requirements, is still in Committee. However, the sponsor is noted for amending her legislation onto other bills. The sponsor is also noted for her dislike for free enterprise medicine in any form and for blasting physicians at every opportunity.

14. Professional Liability Issues - The several bills presented to this Committee in December and January have all been heard and can be considered "dead." An interesting thing occurred last week as the House Republicans offered an amendment to the Speaker's bill to reduce the malpractice non-economic cap to $250,000, rescind the collateral source rule and place a sliding scale on attorney fees in such cases. The debate lasted nearly half an hour, but the proposed amendment was defeated 52 to 93.

Carol F. Williams, Melvin C. Kasten, Norman P. Knowlton, III, David Wilkinson, H. Jerry Murrell, Frederick W. Hahn, Edgar Ailor, David O. Barbe, Steven E. Buie, Rebecca Lueckenhoff, Robert N. Miller, Daniel O'Sullivan, Mrs. Betty Huffaker, Mrs. Beverly Murrell, Mrs. Marge Perkins, and Sam L. Page

Report of the MSMA Commission on Medical Economics, Third Party Medicine, and Governmental Relations

The Commission convened by a telephone conference call on July 21, 1992. Three resolutions had been referred by Council at the 1992 MSMA Annual Convention.

Resolution #50 - "Physician Collective Bargaining"

The 1992 MSMA House of Delegates did not adopt this resolution, but referred it to the Council for study. Subsequent to that action the AMA petitioned the Federal Trade Commission for relief from anti-trust regulation so the medical community might organize as a collectible bargaining entity. The FTC has yet to respond. No action is needed by MSMA at this time.

Resolution #52 - "Pediatric Care in Missouri"

A study was commissioned and presented at the December Council meeting. A committee was appointed to review the report. At the January Council meeting a motion was passed requesting the authors of the study to prepare a supplemental report to address more fully the specific concerns expressed in Resolution #52.

Resolution #55 - "Third Party Payor Billing Practices"

The 1992 MSMA House of Delegates did not adopt this resolution, but referred it to the Council for study. Blue Cross and Blue Shield of Missouri (BCBSMo), one of the parent companies of Healthcare Interchange, Inc. (HII), has discussed the issue of access by electronic filers to BCBSMo through HII. BCBSMo will, in the near future, accept electronic claims from HII only. BCBSMo and two other parent companies, General American and HealthLink, have offered rebates for claims filed through HII and paid by BCBSMo, General American, or HealthLink. The formation of a physician advisory group within HII has begun.

Ad Hoc - Ombudsman Committee Meeting Nov. 6, 1992

The committee which will be phased out as the program matures recommended the following as ombudsman activities:

- Serve as an official liaison to resolve regulatory and reimbursement conflicts encountered by member physicians.
- Provide third party trends and other informational material.
- Maintain liaison with HCFA, MPCRF-PRO, Medicare Part B, Medicaid, and the Missouri Department of Insurance.

James T. Rogers - Chairman, Stephen R. Crespin, Milamari A. Cunningham, Ronald N. Riner, Randall E. Treadwell, James F. Conant, Melvin R. Hayden, Ann C. Peick, Carl Strauss, Luis B. Anglo, Alan S. Braun, John Mentel, Alfred D. Shaplin, and Paul D. Thompson

Report of the Committee on Physicians Health

The Missouri's Physician Health Committee met on February 12 via phone conference and September 26, 1992.

The Missouri Physicians Health Committee staff has had increasing involvement in the development of Policies and Procedures designed to assist Missouri hospitals in the formation of Hospital Physician Health Committees.

There have been increasing requests from hospitals and medical schools in Missouri for educational programs relating to physician health and well-being. Considerable time has been devoted to the development of programs designed to assist medical students, residents and faculty as they experience difficulties in their professional lives.

As a result of the MPHP staff's continued relationship with the Missouri State Board of Registration for the Healing Arts, a sub-committee of the Board has been appointed to interact directly with the MPHP.

The Committee members identified a need to establish a mechanism to be responsive to physicians that have been reported for sexual inappropriateness with patients.

The Advocacy Agreement was revised by Committee members approving additional clauses that physicians agree not to self-medicate, including over-the-counter medications and documentation of attendance at

Marriott's
TAN-TAR-A
Resort

State Representative Chris Kelly (D), Columbia, was the guest speaker at the PAC Breakfast.

12 step meetings is required during the first twelve months of recovery or as recommended the MPH Staff.

The program participant's outstanding accounts were reviewed and it was recommended that as a result of documented hardships, two participant's accounts are to be written off.

The Missouri Physician's Health Program is currently following approximately 65 physicians on an ongoing basis at the end of 1992. This compares to 39 participants in the program at the end of 1990.

The Physicians Health Committee expressed it's sincere appreciation to the hospital administrations and medical staffs of Missouri hospitals that have financially supported the activities of this Committee. It is this support that will assure the continued success of this program. Hospitals that have made contributions to the Physicians Health Program will be recognized in *Missouri Medicine*.

Thomas R. Anderson - Chairman, Thomas M. Ahmann, Donald McIntosh, Hugh E. Bartlett, Jo-Ellyn Ryall, Edward Grim, Diana J. Spade, James R. Criscione, Jr. and C. Edward Felker, III.

Report of the Commission on Public Affairs

The Commission convened by a telephone conference call on February 18, 1993. Dr. Brennan began with a discussion of the proposal to begin reporting charity in dollars instead of hours.

The discussion revolved around several issues, including how the public perceives this kind of information. Drs. Hayes and Brukardt suggested that MSMA could set the "calendar" for publicizing charity care, then local societies could do the publicity and form the project as they chose.

Several members expressed their concern that keeping track of hours (or dollars, for that matter) of indigent care can be cumbersome. But all agreed that having such information could be a useful tool in our relations with the legislature and other groups. Dr. Stricker also pointed out that care that is given in the office is often invisible to the public, while donating time at a public clinic is readily seen and noted. This can be a problem of public perception. In addition, many patients believe they are paying too much already for care, and would not view these dollar amounts of "free care" favorably.

Recommendation:

The Commission recommends that reporting of Missouri physician's charity care continue to be in hours of care given.

Resolution No. 3(A-92)

Discussion then turned to Resolution No. 3, referred to the Commission from the annual meeting 1992.

The members agreed that much of the intent of Resolution No. 3 is contained in the television proposal also before the Commission. Several physicians commented on the appropriateness of the topics already proposed and were optimistic about the television project's prospects. The Commission reviewed data about how few patient information materials --although readily available--are actually purchased and used by MSMA member physicians. In a similar vein, it was noted that television stations are no longer inclined to broadcast public service announcements free of charge. So although the commission was interested in the public relations aspects of Resolution 3, they expressed sentiment against adopting the resolution. Instead, members of the Commission discussed how the public health topics enumerated in the resolution could become part of the television project.

Recommendation:

The Commission recommended that the public health topics listed in Resolution No. 3(A-92) be incorporated into the *Missouri Medicine* TV project as topics.

Resolution No. 17(A-92)

The Commission then turned to Resolution No. 17(A-92), which seeks to educate physicians about the "fine points" of the law governing the prescribing of controlled substances. The members' main concern was getting information out where physicians would see it. Several ideas were discussed for distributing either the rules themselves, or a summary of them.

All agreed that when physicians are informed of the rules, they modify their prescribing habits to conform. Many physicians violate the rules only through ignorance.

Recommendation:

The Commission recommends that a direct mailing "memo" be sent to alert members to the rules and regulations on prescribing controlled substances. The mailing would include a copy of the actual rules and regulations, and would also inform physicians that the Missouri Bureau of Narcotics and Dangerous Drugs has personnel available to present educational programs to hospital staffs, county societies, and other physician groups, to educate them about the law.

Television program proposal

The next agenda item was a proposal to begin taping a television version of *Missouri Medicine*, to be distributed via satellite uplink, PBS broadcasts, and local access channels across the state.

The Commission agreed the proposal looked promising, and endorsed the concept. Having already placed additional topics on the list (from Resolution No. 3), the commission endorsed the proposal.

Mini Internship Program

The commission reviewed the experience of the St. Louis Metropolitan Medical Society with its Mini Internship Program, held in November 1991. Dr. Brennan, who worked on the St. Louis committee, said the program went quite well, and the St. Louis society plans to repeat it.

Prenatal newsletter

The Commission discussed the two newsletter proposals before it at length. One proposal comes from the National Committee for the Prevention of Child Abuse (Missouri chapter); the other is from the Bureau of Maternal and Child Health, Department of Health.

All members of the commission saw value in the proposals and were interested in seeing at least one go ahead. They discussed beginning with a pilot program with just a few counties...perhaps one rural, one suburban, and one urban. They also suggested that high-risk mothers could be targeted first. If the project were well-received, it could be expanded and continued.

Recommendation:

The Commission recommends that a pilot newsletter be started, with the cooperation of the Department of Health, targeting high-risk mothers to begin with.

Immunization project

The Commission reviewed immunization statistics and agreed that it would be wise to adopt a proposal that not only casts the association in a positive light, but also helps to remind parents to immunize their children.

The physicians discussed ways that small "give-away" items could be included in mothers' hospital discharge packets. The primary suggestion was a business card-size refrigerator magnet imprinted with the recommended immunization schedule and "courtesy of the Missouri State Medical Association." Dr. Hayes suggested that labor and delivery nurses would probably we willing to include such an item in discharge packets.

Dr. Burkardt further suggested that the county medical societies be enlisted to help distribute magnets, perhaps through community activities the society is already involved in.

Recommendations:

The Commission recommended that the Missouri State Medical Association investigate the possibility of producing and distributing small refrigerator magnets imprinted with the recommended immunization schedule. The primary distribution would be in hospital discharge packets for new mothers, with additional local distribution by county medical societies.

Physician Communication Network

The Commission discussed the Michigan State Medical Society program, which not only trains physicians to be media contacts, but also helps them with letters to the editor or other materials so that they can actually make the contacts in a timely and effective manner.

Dr. Lovinger suggested that the network begin with presidents and the county medical societies, since they are already involved and active. By beginning with the leaders, he noted, the program would be off to a good start, and other physicians would be more likely to follow suit.

Dr. Burkardt suggested training workshops for potential spokespersons be held during the Annual Convention, as many--if not most--of the active members would be attending anyway.

Recommendation:

The Commission recommends that a Physician Communication Network, structured similarly to the Michigan State Medical Society's program, be instituted in Missouri. The initial contacts and trainees would be the county medical society officers.

Daniel J. Brennan - Chairman, Diane Brukardt, Kimberly Hayes, Warren Lovinger, W. E. Stricker, Clarence Martin and Robert P. Wankum

Report of the Committee on Publications

The eighty-ninth volume of *Missouri Medicine* contained 27 scientific articles. These peer-reviewed articles were submitted by Missouri physicians and other scientists representing a wide variety of medical specialties: anesthesiology, cardiovascular & thoracic surgery, endocrinology, family medicine, gastroenterology, neonatology, neurology, oncology, ophthalmology, orthopedics, otolaryngology, pathology, pediatrics, plastic surgery, psychology, public health, pulmonary, radiology, sports medicine, surgery, and urology. The Publication Committee appreciates both the quantity and the quality of submissions received during the year from MSMA members.

Articles dealing with legal, social, economic and ethical issues appeared in the pages of the Journal, too. Authors from across the state (plus several who live and work outside Missouri's boundaries) presented articles concerning access to health care, the Board of Healing Arts, safe harbor regulations, PRO, patient's medical insurance coverage, liability insurance costs, the national practitioners data bank, OSHA, and many other subjects of interest to Missouri physicians. And, each month, a roster of distinguished columnists delivered their advice and views to a primary readership of 6,986, with secondary readership numbering many thousands more.

The publication's basic purpose is to encourage debate and facilitate the flow of ideas between members of the Association. With this purpose in mind, the editors printed articles with diverse views and opinions. This policy stimulated some excellent debate between learned individuals with opposing viewpoints. The number of letters to the editor increased, especially during the first half of the year. The Committee thanks all of these authors for their fine work on behalf of the Journal and its many readers.

The editors continued the custom of printing original art work on the covers of the Journal. This has been the practice since 1985 (Vol. 82). The Publication Committee also recognizes the many talented physicians-artists who have contributed their work for use on the cover of the Journal.

January marked Dr. Donald G. Sessions' last issue as editor of *Missouri Medicine*. He began his tenure with the May, 1988 issue after serving as associate editor for 3 years. As a contributing editor, Dr. Sessions will continue to provide the Journal with guest editorials and articles from time to time.

In February, the council formally appointed Dr. J. Regan Thomas, St. Louis, as the new editor. He assumed his duties with the February issue of the Journal. Also in February, Angela M. Allen joined the Journal's staff as publications assistant. Ms. Allen graduated in 1991 from the University of Missouri School of Journalism.

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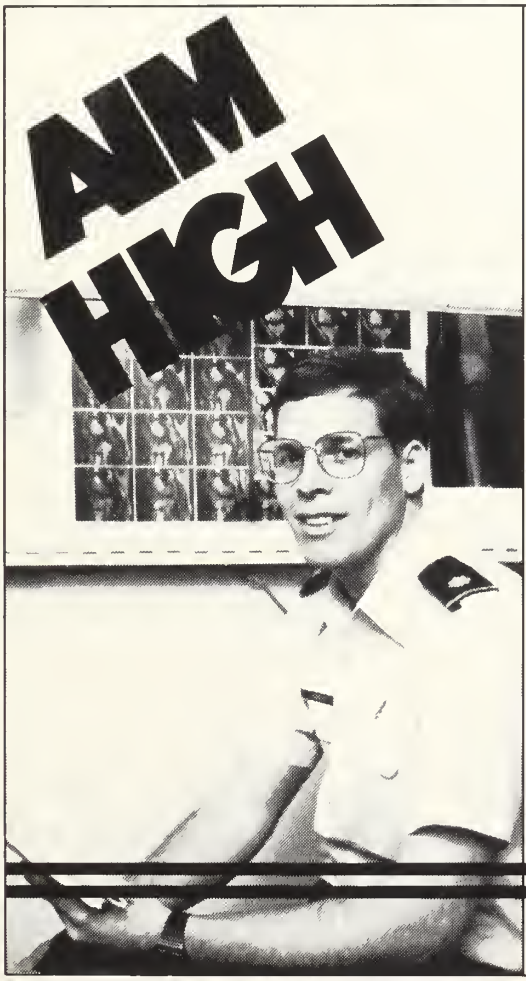
Edward F.X. Hughes, MD, MPH, guest speaker, spoke to the House about the several health care programs that might come to pass.

The publication committee appreciates the continued support of the Journal. Current financial information may be found in the Delegate's Handbook and in the Association's 1992 financial report that was published as part of the March issue.

J. Regan Thomas - Chairman, Ramona Chapman, Philip C. Anderson, John S. Daniels and Donald G. Sessions



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Summary of Council Minutes

1992-1993

Meeting of April 12, 1992

Adam's Mark Hotel, St. Louis

Jerry Murrell, Columbia, was elected chairman of the Council and became the presiding officer.

Frederick Hahn, Independence, was elected vice chairman. Norman Knowlton III, Springfield, was re-elected secretary, and David Wilkinson, St. Louis, was re-elected treasurer of the MSMA.

Meeting of June 7, 1992

Lake of the Ozarks

Councilors approved a statement that although electronic claims submission is cost-effective and efficient, the possible costs to a physician's office should always be considered when a contract for submission services is offered.

A second statement adopted by the Council seeks to have insurance companies that save money by using electronic submission, turn around and share the savings by rolling back their clients' insurance premiums.

A further resolution from the 3rd Councilor District sought to prevent Blue Cross/Blue Shield of Missouri from continuing to offer their Alliance PPO contract.

Also from the 3rd Councilor District came a resolution concerning patient confidentiality and the medical record. After discussion, the final policy statement emphasizes that when an insurance company demands to have a copy of a patient's *entire* record, the physician really need send only a copy of the pertinent *portions* of the record.

News of these actions was distributed through the county medical societies to all MSMA members.

Action was taken to conduct two surveys from the 1992 Annual Convention. These were the survey of pediatrics access and fees under Medicaid (Resolution 52), and the survey of physicians' view of the fairness of the tort liability system (Resolution 48).

Approval was given to holding Medicare and practice management workshops in the southern part of the state.

Dr. Carol Williams named physicians to several committees, including committees to implement a model birthing center and to study the Workers' Compensation system. Dr. Murrell appointed an ad hoc subcommittee to study the access and cost of health care.

Reports were heard from MOMEDICO, the AMA delegation, the Blue Ribbon Committee on Tort Reform, Physicians Health Committee, Publications Committee, the Legislative Affairs Committee, the MMPAC, Committee to Preserve Health Care, the Commission on Continuing Education, the Dean of UMC Medical School, and the PRO.

Meeting of August 23, 1992

Jefferson City

Resolutions were approved by the Council so they could be taken to the AMA meeting in December. They deal with utilization review and billing for the cost of complying with governmental regulations.

Reports were heard from Mr. Fred Tromans, executive director of the State Board of Healing Arts, and Dr. Frank Mohs, medical director at General American/Medicare Part B.

Several workshops were approved for the fall. CME accreditations for several Missouri hospitals were also approved.

Dr. Vernon Balster reported from the Committee on Workers' Compensation, which followed the progress of the state advisory panel on workers' comp.

Continued on next page

Nominations were made for re-appointments to the Missouri Patient Care Review Foundation.

Several suggestions were accepted as topics for journal articles.

A suggestion that physicians' giving under the Charity Care Program be reported in dollars rather than hours was referred to the Public Affairs Commission.

Councilors voted to send a letter of thanks to Drs. John Dehner and Carol Williams for their work in negotiating with Healthcare Interchange Inc. and Blue Cross/Blue Shield of Missouri.

Meeting of December 13, 1992
Jefferson City

The 1993 budget, as presented by treasurer Dr. Wilkinson, was approved.

A proposal from the Metropolitan Medical Society of Greater Kansas City, seeking formation of a statewide peer review panel, was referred to the Hospital Medical Staff Section. This panel would be available for medical staffs across the state whenever they experience problems in accomplishing objective and effective peer review.

Following review of a report from the Department of Social Services, which was an attempt to analyze pediatric services under Medicaid, the Council formed an ad hoc committee to study the report and decide whether it meets the requirements of Resolution 52 (A-92).

Clarification was sought regarding Healthcare Interchange Inc.'s electronic claims filing arrangements, including whether the use of HII can be extended to insurance companies other than the owner-companies.

Following a report from the Legislative Affairs Committee, the Council agreed to have guidelines drafted for collaborative practice with allied health personnel. In addition, it directed the MSMA to draft a bill governing referral to physician-owned facilities, with principles based on AMA policies. The Committee was also charged with studying antidiscrimination language in Missouri's current HIV law.

Discussion about the role of the physician in primary care and rural health care wound up with a directive to form a committee to study the role of the general practitioner in medicine, especially rural medicine.

The reappointment of Dr. J. Regan Thomas as editor of *Missouri Medicine* was approved. Names were also approved for suggestion to the new governor for spots on the Board of Registration for the Healing Arts and the Certificate of Need Committee.

It was voted to invite the president of the Southern Medical Association to the Annual Convention.

Reports were accepted from the Committee on Constitution and Bylaws, the Committee on Continuing Medical Education, the Ombudsman Committee, the Physicians Health Committee, the MMPAC and the Physicians Involvement Program.

Meeting of January 31, 1993
Jefferson City

The Legislative Affairs Committee reported on HB 564. The bill provides for prescribing privileges for allied health providers working under physician protocols, generally expanding collaborative practice. The Council decided to support these privileges not to include prescribing of scheduled drugs for advanced-degree nurses and physician assistants.

Further, the Council voted to develop guidelines for physicians who practice with nurse practitioners, physician assistant, and other allied health personnel, and then seek to have these definitions included in the Griffin bill.

Councilors discussed a proposal to produce a television program featuring Missouri physicians discussing a variety of health topics, to be distributed to public access TV stations around the state. The project was referred to the Public Affairs Commission.

Councilors adopted a 3rd District resolution concerning the summary termination of physicians from managed care contracts. The MSMA will investigate the legality of having a "no cause" termination clause in the contract, and to consider ways to give physicians some due process rights.

Councilors also agreed to support the Board of Healing Arts in their attempt to make a physician's school of graduation a public record. In addition, the Board will be asked to reconsider Missouri's policy of automatic revocation when another state revokes a medical license.

Legislators' names for the annual legislative recognition awards were approved, along with the recipient of the 1993 Citizenship and Community Service Award.

Dr. Steven J. Westgate, a radiation oncologist, was appointed to the *Missouri Medicine* Editorial Board.

RESOLUTIONS

of the 135th Missouri State Medical Association House of Delegates

Resolution 1

Definition of the Practice of Medicine

Introduced by the Greene County Medical Society

RESOLVED, that the Missouri State Medical Association formulate and circulate the definition of the practice of medicine as defined by the Missouri State Medical Association, and be it further

RESOLVED, that the administrative offices of MSMA strive to have this incorporated in state codes.

House action: Referred to Council for study and action.

Resolution 2

Speakers at MSMA Reference Committee Meetings

Introduced by the Greene County Medical Society

House action: Not Adopted.

Resolution 3

Primary Care Physician Shortage

Introduced by the Greene County Medical Society

RESOLVED, that the Missouri State Medical Association recommends that medical schools in Missouri design curricular changes to encourage students to enter into primary care, and be it further

RESOLVED, that the Missouri State Medical Association encourage efforts to improve financial support for primary care residencies.

House action: Adopted

Resolution 4

MSMA Position on the Giving of Expert Medical Testimony Policy Manual

Introduced by the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association reaffirms that all licensed physicians may render expert medical opinions in cases other than those involving medical malpractice. Such testimony should be limited by the training and experience of the individual physician.

House action: Adopted.

Resolution 5

MSMA Position on a Legal Definition of the Practice of Medicine

Introduced by the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association will make obtaining legislation defining the practice of medicine one of its primary goals in 1993.

House action: Referred to Council for study & action.

Resolution 6

MSMA Priority Issue List

Introduced by the Buchanan County Medical Society

RESOLVED, MSMA provide monthly listing in *Progress Notes* of all resolutions (or other matters) referred to any Council committee indicating date of referral to committee, date of action by committee and description of action by committee.

House action: Adopted.

Continued on page 350

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Reference committee chairmen Drs. Stephen McCray and John Rollo congratulate Dr. Ann Peick following the completion of her reference committee report to the House.

Continued from page 349

Resolution 7

MSMA Position Regarding Smoke-Free Workplace Law

Introduced by the Buchanan County Medical Society

RESOLVED, that MSMA support legislation which would encourage smoke-free workplaces for all Missourians.
House action: Adopted.

Resolution 8

MSMA Position on Physician Choice Under Workers' Compensation

Introduced by the Buchanan County Medical Society
House action: Not Adopted.

Resolution 9

MSMA Position on Mental Health Screening Forms for Nursing Home Admission

Introduced by the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association work toward the replacement of the Mental Health Screening Form with a brief, clinically useful, and hassle-free mental health assessment form; and be it further

RESOLVED, that any mandatory waiting period for examination be replaced with a temporary admission at the physician's discretion until the appropriate evaluation can be obtained.
House Action: Adopted.

Resolution 10

MSMA Position on Minimum Data Set

Introduced by the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association will work toward the simplification of the Minimum Data Set requirement of long-term care facilities, taking this issue to the AMA (A-93).
House Action: Adopted.

Resolution 11

MSMA Position Against Mandatory Electronic Claims Submission

Introduced by the Buchanan County Medical Society

RESOLVED, that the position of the Missouri State Medical Association is that mandatory electronic claims submission is undesirable due to the burden it would place on many physicians, especially solo practitioners or small groups, which burden would probably not be figured into RBRVS, and that all efforts aimed toward such a mandate should be fought vigorously; and be it further

RESOLVED, that this position be taken to AMA (A-93) with the intent of making the MSMA position the AMA position.
House action: Filed.

Resolution 12

MSMA Position on Three-Day Acute Hospitalization Prerequisite for Skilled Nursing Care Coverage

Introduced by the Buchanan County Medical Society

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FOUR YEARS IN MED SCHOOL,
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RESOLVED, that the Missouri State Medical Association work toward elimination of the Medicare three-day acute hospitalization prerequisite for admission to skilled nursing care by including this issue in its list of priorities, and by taking the issue to the AMA (A-93).
House action: Filed.

Resolution 13
MOPS Inequities
Introduced by the Buchanan County Medical Society

House action: Not adopted.

Resolution 14
Glucose Testing Should be a Waivered Test
Introduced by the Buchanan County Medical Society

House action: Not adopted.

Resolution 15
Medicaid Reimbursement for Office Visits
Introduced by the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association shall protest the refusal of Missouri Medicaid to pay for appropriate care rendered to patients by participating physicians attempting to improve the care available for indigent patients.
House action: Adopted.

Resolution 16
Medical Care Provided to Medicaid Patients
Introduced by the Buchanan County Medical Society

House action: Not adopted.

Resolution 17
MSMA Position on Nurse Practitioners
Introduced by the Buchanan County Medical Society

RESOLVED, that MSMA opposes the independent practice of nurse practitioners.
House action: Referred to Council.

Resolution 18
Physician-Nurse Practitioner Relationship
Introduced by the Northeast Missouri
County Medical Society

RESOLVED, that representatives of the MSMA meet with the Board of Healing Arts, Missouri State Legislative, and Nursing Board to clarify and produce specific legislation to allow this collaborative practice in the State of Missouri. Such legislation and policy should include the following concepts:
1) Education and training of health care providers appropriate to their area and level of practice.
2) Clarification of the use of physician supervised protocols to get services and medications to patients who need them.
3) Clarification of the physician, patient relationship to include establishment of this relationship, if physician provides legal approval of prescription medication after review of diagnosis and its establishment with a licensed Nurse Practitioner, and be it further

RESOLVED, that the Missouri State Medical Association should immediately advance and support the develop-

Continued on page 353

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Continued from page 351

ment of rules and regulations which encourage all health professionals to work together at their maximal educational ability to provide safe, quality health care to the citizens of Missouri.
House action: Adopted.

Resolution 19

Reciprocal Agreements for Reimbursement for Medical Care Costs

Introduced by the Cape Girardeau
County Area Medical Society

RESOLVED, that the Governor of the State of Missouri, the Missouri Legislature or other governmental bodies so empowered be directed to enter into negotiation with our bordering states to enter into a reciprocal agreement to pay that state in which the service is performed at the same rate that state in which the patient receives such care pays for its own indigent patients, i.e. that patients from the various other states upon receiving care in the State of Missouri would be paid at the same rate that Missouri Medicaid pays for its indigent patients and be reciprocal with the other states, and be it also

RESOLVED, that these payments be done in a timely manner and be given first priority.
House action: Referred to Council.

Resolution 20

Insurance Claims Timely Payment

Introduced by the Cape Girardeau
County Area Medical Society

RESOLVED, that the MSMA go on record to work for adoption of the Federal laws on timely payment of normal claims to apply to all third party payers.
House action: Adopted.

Resolution 21

Automobile Seizure and Forfeiture Law

Introduced by the Greene County Medical Society

RESOLVED, that the Missouri State Medical Association, hereby urges the General Assembly of the State of Missouri to pass enabling legislation similar to the Portland, Oregon law which provides for the seizure and forfeiture of motor vehicles operated by persons who continue to operate a motor vehicle after their operator's license has been revoked or suspended when they have been convicted of driving a motor vehicle while intoxicated, or after they have been convicted of manslaughter or criminally negligent homicide involving a motor vehicle, or the operation of a motor vehicle after having been determined to be a habitual traffic offender and conviction under the DWI law; and that the constitutional home rule cities who have an attorney sitting as Municipal Judge be permitted to adopt ordinances similar to the state law.
House action: Adopted.

Resolution 22

Rural Hospital Exemption from Medicaid Hospital Tax

Introduced by Craig Carmichael, Medical Student
Washington University

RESOLVED, that the MSMA adopt the position that those states which have assessed a special tax on hospitals to fund the Medicaid program should be allowed and encouraged to exempt rural hospitals (not just hospitals with Sole Community Provider status) from said tax due to their inability to pay said tax and the large percentage of Medicare patients in their facilities; and be it further

RESOLVED, this resolution be referred to the House of Delegates of the American Medical Association for consideration at its A-93 meeting.
House action: Referred to Council.

Resolution 23

Reimbursement by Hourly Rate

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association (MSMA) adopt policy similar to a motion passed by the St. Louis Metropolitan Medical Society Medical Economics Committee which was approved by the SLMMS Council on 6/9/92 which expresses opposition to reimbursement for surgery on an hourly basis and supports UCR and other reimbursement methods, and be it further

RESOLVED, that the most recent AMA Current Procedural Terminology (CPT) be the basis for reimbursement in all cases.
House action: Adopted.

Resolution 24

Publish MSMA Council Minutes in *Missouri Medicine*

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that a summary of the minutes of the MSMA Council meetings be published in the next available issue of *Missouri Medicine* following each Council meeting.
House action: Referred to Council.

Resolution 25

Incorporate *Progress Notes* into *Missouri Medicine*

Introduced by the St. Louis Metropolitan
Medical Society

House action: Not Adopted.

Resolution 26

Improper Use of DEA Registration Numbers

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association

Continued on page 354

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petition the Missouri Department of Insurance to take steps to prohibit the use of Drug Enforcement Administration (DEA) registration numbers for purposes other than prescribing controlled substances, and be it further

RESOLVED, that MSMA notify Missouri physicians to request corrective action by the Missouri Department of Insurance against insurance carriers who request DEA registration numbers for purposes other than the intended use.
House action: Adopted.

Resolution 27
Driving While Intoxicated - Strengthening & Enforcement of Current Legislation
Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association work with the Missouri Advisory Council on Alcohol & Drug Abuse to support Senate Bill #167 to help strengthen current driving while intoxicated (DWI) laws, and be it further

RESOLVE, that model legislation be introduced that a blood alcohol level of 0.05% be the criterion level for legal limit for DWI, and be it further

RESOLVE, that plea bargaining be prohibited if a DWI results in death or substantial bodily harm, and be it further

RESOLVED, that the Missouri State Medical Association bring this program to the attention of the legislators and the public so it benefits safe driving in the State of Missouri.
House action: Adopted.

Resolution 28
Use of Polycarbonate Clear Face Guards Worn By all Baseball Players in Organized Baseball, Ages 5-14
Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association, as petitioned by the Facial Plastic Surgery Society of St. Louis, on behalf of the St. Louis Metropolitan Medical Society, advocate the use of polycarbonate face guards as permanent installation on the current bilateral ear protective batter's helmet, and be worn while at bat by all baseball and softball players as required safety equipment in all organized baseball and softball for those children from 5-14 years of age, and be it further

RESOLVED, that the Missouri State Medical Association transmit this resolution to the 1993 Annual Meeting of the American Medical Association.
House action: Adopted.

Resolution 29
Continue Tort Reform
Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association vote not to extend the Memorandum of Understanding between the Com. to Preserve Health Care and the Missouri Association of Trial Attorneys, effective November 1, 1990, when it expires midnight Wednesday, June 30, 1993, and be it further

RESOLVED, that the MSMA Blue Ribbon Committee for Malpractice and Tort Reform be reactivated and the committee undertake immediate steps to prepare a plan for tort reform, and be it further

RESOLVED, that the Missouri State Medical Association representatives to the Committee to Preserve Health Care pursue negotiations with the Missouri Association of Trial Attorneys for the purpose of further tort reform, specifically:

1) Collateral source reductions.
2) Sliding scale in contingency fees.
3) A statement of merit signed by a licensed physician required to file a case.
4) Any case less than $50,000 go to a non-binding arbitration panel.
5) All Medicaid patient care covered under state legal expense fund.
6) Correction of the inequities in requirements for professional liability insurance coverage between large metropolitan areas and rural areas.

House action: Adopted.

Resolution 30
Principles for Medical Tort Reform
Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that the Missouri State Medical Association in all future legislative proposals, negotiations, and agendas dealing with medical tort reform and health care reform will insist that witness in medical tort liability cases prove that the opinion they give in court is based on established medical theory supported by a significant proportion of experts in their field of expertise, and be it further

RESOLVED, in like manner that the civil courts must decide whether expert witnesses are legitimate experts in their field before the experts are permitted to testify, and be it further

RESOLVED, that the Missouri State Medical Association transmit this resolution to the 1993 annual meeting of the American Medical Association.
House action: Adopted.

Resolution 31

Department of Health Rules and Regulations for Mammography Services

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that MSMA support legislation to revise Sections 192.760 to 192.766 RSMo which pertain to mammography systems authorization.
House action: Adopted.

Resolution 32

Statewide Peer Review for Hospital Adverse Actions

Introduced by the MSMA Hospital
Medical Staff Section

RESOLVED, that the Missouri State Medical Association implement a statewide peer review consultant system which would:

a. Establish a pool of physician experts who, upon request, could review proposed adverse actions against physicians by hospitals or other recognized medical institutions or societies which offer credentialing to physicians.

b. Describe the specific review services provided and the limitations on such services.

c. Determine the administrative needs, appropriate budget and a self-sustaining fee schedule for such services.

d. Outline a system of physician recruitment, education and "credentialing" for inclusion on the peer review panels.

e. Outline the appropriate circumstances under which the statewide peer review may be accessed and the process of pairing the physician reviewer with a case.

f. Establish appropriate indemnification procedures and assure compliance with the HCQIA and state peer review statutes.

g. Outline the benefits and responsibilities for physicians who volunteer to do such peer review.

h. Study the advisability of cooperation with other states' peer review systems and whether to allow out-of-state institutions access to Missouri peer review consultant services.

i. Appropriately interact with the Missouri Hospital Association and the Missouri Bar Association in the implementation of this statewide peer review consultant system.

House action: Adopted.

Resolution 33

Distribution of Revised *MSMA Model Medical Staff Bylaws*

Introduced by the MSMA Hospital
Medical Staff Section

RESOLVED, that the cover letter to the newly revised ***MSMA Model Medical bylaws Staff Bylaws*** stress the issue of new developments not contained in the Model Bylaws. This should address topics such as unilateral amendment of bylaws, recognition of no contract, clean sweep provisions, economic credentialing, vertical integration of medical staffs and other relevant topics.

Rob Schaaf, MD, answers questions about a resolution he submitted on behalf of the Buchanan County Medical Society.

House action: Adopted.

Resolution 34

Prohibition of Economic Credentialing and Contracting

Introduced by the MSMA Hospital
Medical Staff Section

RESOLVED, that the MSMA work with the Missouri Department of Health to prohibit the inclusion of economic criteria or economic contracting as a part of hospital licensing rules and regulations.
House action: Adopted.

Resolution 35

Criteria Employed for Hospital Credentialing

Introduced by the MSMA Hospital
Medical Staff Section

RESOLVED, that the MSMA support the policy that hospital credentialing should be based primarily upon the professional qualifications of the physician to deliver medical care of excellence, and be it further

RESOLVED, that the MSMA oppose the use of cost patterns as a sole or primary criterion for hospital credentialing since it does not address the issue of quality of patient care, and be it further

RESOLVED, that if economic issues are to be a part of credentialing, the hospital medical staff should be involved and no unilateral amendments by the medical staff or hospital Board of Directors should be allowed.
House action: Adopted.

Resolution 36

Practical Suggestions to MSMA Members on Economic Credentialing

Introduced by the MSMA Hospital
Medical Staff Section

RESOLVED, that the Missouri State Medical Association

Continued on page 356

Continued from page 355

Hospital Medical Staff Section promote the following practical suggestions to MSMA members through the various member-benefits and services:

1. That appropriate medical staff committees and leadership should be involved in the development of any models for economic analysis of physician performance in hospitals;
2. That the medical staff and hospital board need to agree on any appropriate changes to the medical staff bylaws regarding economic factors to be considered in medical staff membership and clinical privilege decisions; and
3. That it be the responsibility of the medical staff to ensure that issues such as severity of illness are considered in the development of economic measurement tools."

House action: Adopted

Resolution 37

Inappropriate Designation of Observation/Admission Status

Introduced by the Metropolitan Medical
Society of Greater Kansas City

RESOLVED, that a hospital admission be one that requires utilization of resources not available under another setting and for an appropriate time until the patient's condition permits another more appropriate setting; and be it further

RESOLVED, that MSMA approves of the abolition of the arbitrary distinction between admission and observation status for initiating the use of hospital resources; and be it further

RESOLVED, that the MSMA's AMA delegation take this issue to the AMA (A-93).
House action: Adopted and sent to AMA A-93.

Resolution 38

MSMA Liaison With Missouri Association for Agriculture, Biomedical Research and Education (MAABRE)

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that MSMA enter into discussions with Missouri Association for Agriculture, Biomedical Research and Education (MAABRE) for the purpose of adding organized medicine's advice and influence to these efforts.
House action: Adopted.

Resolution 39

The Patient's Right to Choose Their Physician

Introduced by the Cape Girardeau
County Area Medical Society

RESOLVED, that the MSMA House of Delegates strongly endorses the concept that patients have the right to choose their physicians regardless of the employer's structured closed panel of health service providers. The closed panel, in effect, creates a monopoly and is contrary to fair trade in a free enterprise system; and be it also

RESOLVED, that MSMA pursue laws to ensure that the patient has access to the physician(s) of choice to provide health care without financial penalty; and be it also

RESOLVED, that MSMA support a public education program to reinforce the concept of the patients' right to choose physicians; and be it also

RESOLVED, that MSMA's AMA delegation take this issue to the AMA (A-93).
House action: Adopted and sent to AMA A-93.

Resolution 40

Prohibit Third Party Payors from Requiring Professional Liability Coverage Beyond State Mandated Limits

Introduced by the St. Louis Metropolitan
Medical Society

RESOLVED, that MSMA finds unreasonable the demand by any third party payor that their providers carry professional liability coverage in excess of those mandated by the state of Missouri, and be it further

RESOLVED, that MSMA petition the Department of Insurance and seek legislation to make such regulations and laws that would prohibit such actions by third party payors.
House action: Adopted.

Resolution 41

Encouraging Availability of Indigent Care

Introduced by the Greene County Medical Society
House action: Not adopted.

Resolution 42

Commission on Office Laboratory Accreditation (COLA)

Introduced by the Missouri Society
of Internal Medicine

RESOLVED, That the Missouri State Medical Association endorse the accreditation program for office laboratories of the Commission on Office Laboratory Accreditation; and be it further

RESOLVED, That the Missouri State Medical Association publicize information about the Commission on Office Laboratory Accreditation and encourage that all physicians seek clinical laboratory accreditation through COLA in lieu of federal certification.
House action: Filed.

GO FOR(E) IT

Continued from page 336

Many of the counties have projects that helped children of all ages to see the effects substance abuse can have on their bodies. St. Louis Metropolitan raised money to help bring and support two Life Education Mobile Vans to the schools in St. Louis and St. Louis County.

Actually, there are more health projects than counties as each county responds to its communities needs with their volunteer and financial support.

Boone County conducted their Caring for Your Child seminars again this year. Clay-Platte has gotten medication cards made so that patients can record their medications to show to a new doctor or pharmacist.

Cape Girardeau County raised a lot of money which they shared with other community organizations. So did Greene County. In fact they and the Medical Society raised money from a golf tournament. Yes, Dave and I got to play in this one and we won in our flight. We had very good partners!

This was a most important legislative year, as you all know. So we chipped close to the main legislative issues.

Before the election many counties held voter registrations, even getting you and your family to register and hopefully to vote. Many discussed the issues with their senators and representatives at coffees, luncheons and dinners.

Now that the election is over, we are trying to keep on top of the issues by our key contact program and phone. Just last month we had a most successful MSMA Auxiliary Day at the legislature. Over 50 legislators met with over 50 Auxilians for coffee so that the topics that would be on the floor that day could be discussed. We even got to express our views to the Governor, who dropped in for coffee that morning.

Raising money, or sinking that putt for dough, for the American Medical Association Education and Research Foundation is becoming more important each year. Some of you probably would not be sitting here this morning if it had not been for a loan or scholarship from AMA-ERF or from the Missouri State Medical Foundation. We are trying very hard to reach our state goal of $42,000 by Saturday noon. Last year $2.4 million was raised by the Auxiliaries across the country.

At Christmas a great deal is raised by the counties and the state having Sharing Cards. Metro Med of Kansas City had a Taste of the Seasons luncheon, and Jasper County had a medical specialties dinner.

Guests at the "Go For(e) It Invitational Buffet & Dance" tested their golf skill (naturally) during the AMA-ERF fund raising event.

Tonight and all during the convention you will have a chance to bid on the wonderful baskets each county has brought. The winners will be announced at Saturday noon.

Tonight is the **Go For(e) It** Invitational Buffet and Dance. Tan-Tar-A has gone all out in preparing food from different parts of the country where there are famous golf courses. There will be some special items from Missouri's professional golfers, putting contests, chipping contests and door prices. It really promises to be a fun evening and for such a good cause, your medical school. The evening has been entirely underwritten, so your contribution of $50 per person is all tax deductible.

In closing, I want to say that this has been some golf game. From the joint fall conference and seminar with the Illinois Auxiliary, at which Jane Boucher talked about "The High Cost of Low Esteem," to the midwinter board meeting with Kansas, Nebraska, and Iowa Auxiliaries at which Marlene Wilson conducted a workshop on volunteerism and the importance volunteers play in our organization. From attending the MSMA Legislative Committee meetings and the MSMA Council meetings five times this year, to the cooperation and support of Royal Cooper and the entire MSMA staff,

From the Auxiliary officers and State Board members who have been remarkable by freely giving their time, effort and resources, to each member of the Auxiliary and to each one of you for your kindness and support. **Go For(e) It...MSMAA**...and we did.

On behalf of the Auxiliary, I want to wish you a very successful and productive 135th Annual Convention. Thank you.

Courtesy Resolution on Deceased Members

WHEREAS, there have been 62 deaths among members since the 1992 Annual Convention, and

WHEREAS, each of these members is missed as an individual, as well as for his/her contributions to the practice of medicine and to the Missouri State Medical Association, and

WHEREAS, the loss of each member is felt by all members, as well as his/her loved ones, and close associates and the patients he/she has served with dedication, therefore be it

RESOLVED, that the House of Delegates now pay personal tribute by standing for a moment of silence in memory of each of these members we have lost and whose names will be recorded in the minutes of the Annual Convention.

Members Deceased Since the 1992 Annual Convention

Arnoldo Kuczer, St. Louis
Dale F. Burton, Hannibal
Joseph L. Johnston, Springfield
Florence E. MacInnis, Kansas City
Thomas G. Otto, Cape Girardeau
Sigmund Tashma, Clayton
Laura Walters, Columbia
Doris C. Gilpin, St. Louis
David Goldring, St. Louis
Carl G. Harford, St. Louis
Karl L. Keffler, St. Louis
John A. Virant, St. Louis
James W. Willoughby, Liberty
Frederick B. Campbell, Overland Park, KS
Donald J. Dickler, Clayton
Robert H. Fitzgerald, Kansas City
Anthony C. Hooper, St. Louis
Edward C. Kienzle, St. Louis
Robert J. Rothweiler, Chesterfield
Herbert H. Siesener, St. Louis
Charles B. Wilkinson, Kansas City
Arnold V. Arms, Leawood, KS
Richard R. Cohle, Carthage
Donald E. Heins, St. Joseph
Morris A. Mueller, San Antonio, TX
Donald R. Reimer, Jackson
John E. Yannakakis, Town and Country
Christos Antoniou, St. Louis
Omer E. Hagebusch, Boca Raton, FL
Melvin M. Schwartz, Richmond Heights
Clifford C. Wilson, Walnut Creek, CA
Richard C. Arnold, Columbia
Arthur Bortnick, University City
Joseph S. Cope, Lexington
Nathaniel Goodman, St. Louis
Joshua Jensen, Sr., Foristell
Norman K. Muschany, St. Louis
Marvin L. Bills, Pensacola, FL
Virgil O. Fish, Town and Country
John Hardy, Kansas City
Paul A. Knepper, III, St. Joseph
G. Leland Melson, II, St. Louis
Helman C. Wasserman, St. Louis
George C. Wee, Chesterfield
Sheldon R. Braun, Columbia
Francis D. Dean, Fayette
Raymond F. Gard, Wichita, KS
Robert A. Huckstep, Farmington
William Levanvo, Joplin
John R. McDaniel, St. Joseph
Marlin C. Spoeneman, Jacksonville, FL
Harry J. Stein, Jennings
Mitchel L. Bartnick, St. Louis
George Ittner, Jr., St. Louis
John E. Lamy, Sedalia
Robert H. Mitchell, Shawnee Mission, KS
George E. Scheer, Richmond Heights
Bruce Shackter, Springfield
William Oehler, Cape Girardeau
Frede Mortensen, Webster Groves
Lawrence Pifer, St. Joseph
Joseph R. Prokop, St. Joseph

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Air Force Health Professions

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Blue Cross/Blue Shield of Missouri, *St. Louis*

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CyCare Systems, Inc.

Disability Determinations Division of Medical Services - State of Missouri

Doctors' Office Systems

Encyclopedia Britannica, North America

Fisons Pharmaceuticals

Health Care Interchange, Inc

HealthSouth Rehabilitation

Mayer Hoffman McCann

Mc Neil Consumer Products Co.

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Medical Defense Associates

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Merck Human Health Division,

Merrill Lynch

Metropolitan Reference Labs

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Miles, Inc.

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Peace Island Lodge

Pfizer Labs

The PIE Mutual Insurance Co.

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Professional Healthcare Consultants

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Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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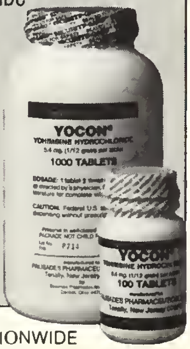
References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



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Reference: 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991,14:146-151.

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CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

Pregnancy and *lactation*. Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS

Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

PRECAUTIONS

General: Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

Homozygous Familial Hypercholesterolemia. Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

Renal Insufficiency. A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SO 31,906). A small increase was seen in mean AUC values and half-life (t1/2) for the inactive enzymatic ring hydroxylation metabolite (SO 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

Information for Patients: Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

Drug Interactions: *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See WARNINGS: Skeletal Muscle.

Antipyrine: Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

Cholestyramine/Colestipol: Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

Warfarin: In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

Cimetidine. The $AUC_{0\text{-}12hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

Digoxin. In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SO 31,906 and SO 31,945 was not altered.

Gemfibrozil: In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SO 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with *aspirin*, *antacids* [1 hour prior to PRAVACHOL (pravastatin sodium)], *cimetidine*, *nicotinic acid*, or *probucol*, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

Other Drugs: During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

Endocrine Function: HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p < 0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a $\geq 50\%$ rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

CNS Toxicity: CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity) This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p < 0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0 5 to 5 0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p < 0.05$). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/− mouse lymphoma cells, a chromosomal aberration test in hamster cells, and a gene conversion assay using *Saccharomyces cerevisiae* In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs The clinical significance of these findings is unclear

Pregnancy: Pregnancy Category X: See CONTRAINDICATIONS.

Safety in pregnant women has not been established Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter^2). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

Nursing Mothers: A small amount of pravastatin is excreted in human breast milk Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

Pediatric Use: Safety and effectiveness in individuals less than 18 years old have not been established Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS **General**)

ADVERSE REACTIONS

Pravastatin is generally well tolerated, adverse reactions have usually been mild and transient In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy, this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients

Adverse Clinical Events: All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug

	All Events %		Events Attributed to Study Drug %	
Body System/Event	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0 0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3 6	2.7	3.4
Heartburn	2.9	1 9	2.0	0.7
General				
Fatigue	3.8	3 4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3 2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1 2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4 1	0 1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

Skeletal: myopathy, rhabdomyolysis.

Neurological: dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy

Hypersensitivity Reactions: An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome

Gastrointestinal pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting

Reproductive gynecomastia, loss of libido, erectile dysfunction.

Eye: progression of cataracts (lens opacities), ophthalmoplegia

Laboratory Test Abnormalities: Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

Concomitant Therapy: Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions.**)

OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required

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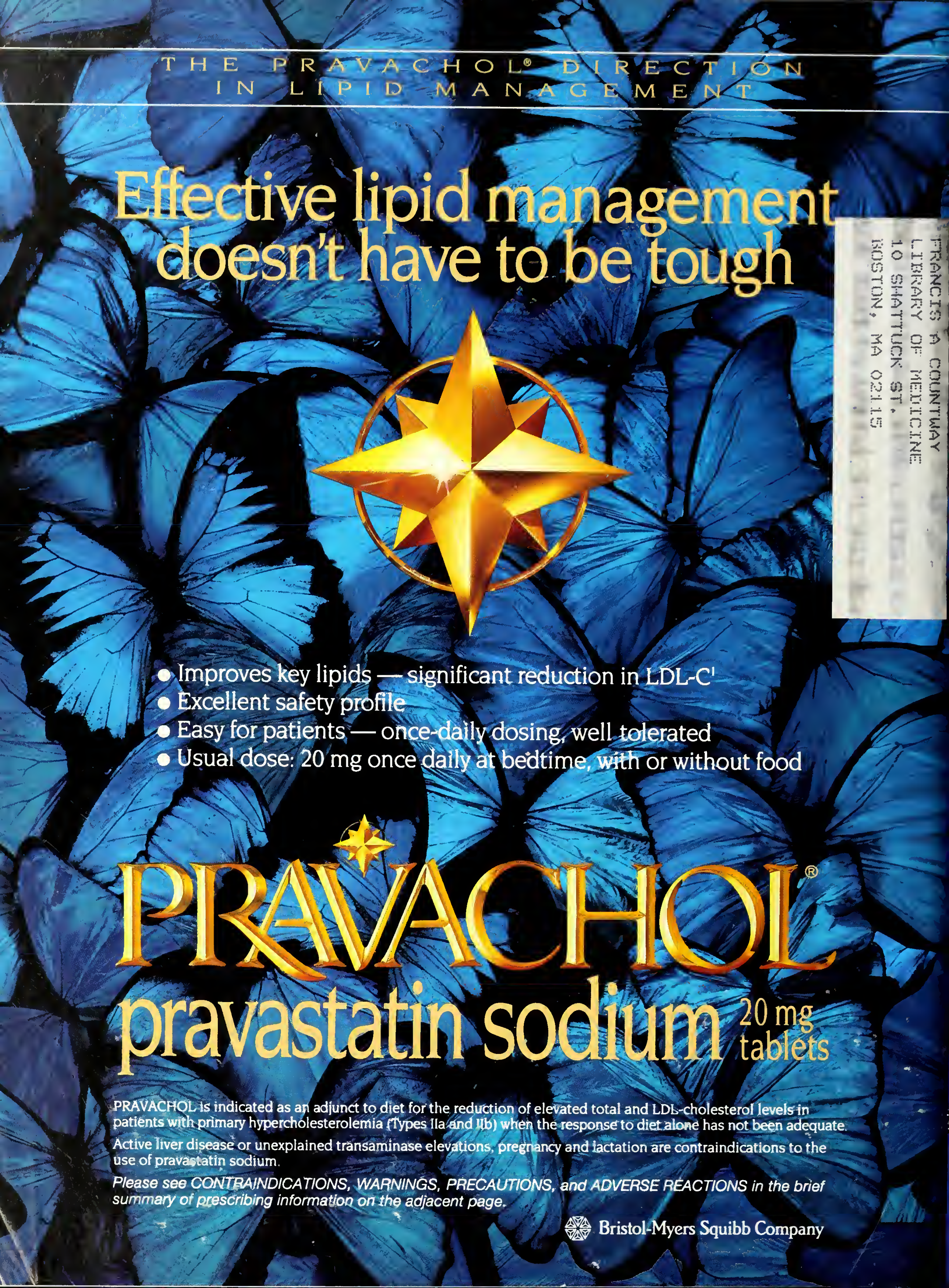

THE PRAVACHOL® DIRECTION IN LIPID MANAGEMENT

Effective lipid management doesn't have to be tough

- Improves key lipids — significant reduction in LDL-C[1]
- Excellent safety profile
- Easy for patients — once-daily dosing, well tolerated
- Usual dose: 20 mg once daily at bedtime, with or without food

PRAVACHOL®
pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.

Bristol-Myers Squibb Company

FRANCIS A COUNTWAY
LIBRARY OF MEDICINE
10 SHATTUCK ST.
BOSTON, MA 02115

1993

Annual Convention

Preliminary Program

Supplement to *Missouri Medicine*

January 1993

THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE
BOSTON, MA
JAN 14 1993

Missouri State
Medical Association

Dear Colleague:

It is my honor and pleasure to invite you to the 135th annual convention of the Missouri State Medical Association. This is a preliminary program of the many events planned for the meeting, to be held April 1 - 4, 1993, at Tan-Tar-A, Lake of the Ozarks.

Once again, our convention will include a wide variety of scientific sessions, covering 21 specialties and a myriad of topics. This is an outstanding opportunity for members to pick up continuing medical education hours in a convenient forum. Many of your specialty groups will hold their annual meetings in conjunction with the MSMA convention, and you will find these listed under the sponsoring group.

I also want to invite you to sit in on the House of Delegates sessions. Whether you are serving as a delegate or not, you will find the sessions interesting and enlightening. The issues debated in the House often go on to influence every practicing physician in the state.

Our special guest from the American Medical Association will be Raymond Scalettar, M.D., chairman of the AMA Board of Trustees. He will address the House of Delegates on Friday, April 2. You are also invited to attend the inauguration of our next President, Melvin C. Kasten, M.D, of Cape Girardeau.

The 135th Annual Convention promises to be another fine meeting in the long tradition of the Missouri State Medical Association. We hope to see you at the Lake this April!

Sincerely,

Carol F. Williams, M.D.

Carol F. Williams, M.D.
President

The 135th Annual Convention of the Missouri State Medical Association

April 1 - 4, 1993
Tan-Tar-A
Lake of the Ozarks

The Missouri State Medical Association
is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

The Missouri State Medical Association designates this continuing medical education activity for Category I credit hours of the Physician's Recognition Award of the American Medical Association.

Although every effort has been made to obtain accurate information, the material in this Preliminary Program is subject to change.

On the cover

"If All The Days Were Spring" ... the apt title of our cover painting by noted Missouri artist Joseph Orr. With the pink dogwood in bloom by a peaceful stream, the picture exemplifies Missouri in the spring. Joseph Orr's studio is located on Route KK, just east of Tan-Tar-A Resort.

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1993 Annual Convention

Scientific Program

(listed alphabetically by specialty/sponsoring organization)

ALLERGY

Friday, April 2

6:30 p.m. Dinner

Saturday, April 3

7:30 a.m. Continental Breakfast

8:00 a.m. Annual Charles A. Brasher, M.D. Memorial Lectureship

co-sponsored by the Missouri Thoracic Society

8:30 a .m. Scientific Program
"Atopic Dermatitis"
Speaker: Donald Y.M. Leung, M.D., National Jewish Hospital, Denver, Colorado

9:30 a.m. "Drug Allergy"
Speaker: Timothy Sullivan, M.D., University of Texas, Dallas

10:30 a.m. Rand E. Dankner, M.D., Chesterfield

11:30 a.m. Timothy Sullivan, M.D., Dallas, Texas

12:15 p.m. Annual Business Meeting and Luncheon

Moderator: Michele Kemp, M.D., Chesterfield

Sponsored by the Missouri State Allergy Association

ANESTHESIOLOGY

Friday, April 2

6:30 p.m. Reception

Saturday, April 3

7:00 a.m. Board of Directors' Breakfast

7:00 a.m. Residents' Breakfast

8:00 a.m. Continental Breakfast

8:30 p.m. Scientific Program
Pain Management
"Perioperative Pain Prevention"
Speaker: Robert Fisher, D.O., Assistant Professor of Anesthesiology and Director of Pain Management Clinic, Columbia

***Objective:** The participant will learn and review important aspects of pain and recent advances in pain treatment.*

12:00 noon Business Luncheon

2:00 p.m. "Reimbursement for Pain Practice"

Sponsored by the Missouri Society of Anesthesiologists

AMA Special Guest

Special guest speaker at the 135th Annual Convention will be **Raymond Scalettar, M.D.,** an internist and rheumatologist from Washington, DC. Dr. Scalettar was re-elected to the AMA Board of Trustees in June 1991. He was elected chair of the Board in 1992.

He will address the House of Delegates on Friday, April 2.

CANCER

Saturday, April 3

Objective: To inform physicians of the current multidisciplinary approach to rectal cancer therapy.

9:00-12:00 Scientific Program
"Current Therapy for Rectal Cancer"
Speaker: Marvin Lopez, M.D., F.A.C.S., Assistant Professor of Surgery, St. Louis

Co-sponsored by the Missouri State Surgical Society and the Missouri Chapter, American College of Surgeons.

12:30 p.m. Luncheon

Sponsored by the American Cancer Society
co-sponsored by the Missouri Chapter, American College of Surgeons

DERMATOLOGY

Friday, April 2

Objectives: To present timely topics of interest to dermatologists and referring physicians. Emphasis will be given to the diagnosis and treatment of a variety of dermatological diseases including erythema multiforme, psoriasis, brown recluse spider bites, drug eruptions and dermatophyte infections.

2:00 p.m. "Brown Recluse Spider Bites"
Speaker: Philip Anderson, M.D., Professor and Chairman, Department of Dermatology, University of Missouri Medical Center, Columbia

"Drug Eruptions"
Speaker: John DeSpain, M.D., Clinical Assistant Professor of Pathology, University of Missouri, and Private Practice of Dermatology, Columbia

"How to Fight Dermatophytes and Win"
Speaker: James Roller, M.D., Private Practice of Dermatology, Columbia

"Therapeutic Update"
Speaker: Susan Zurowski, M.D., Assistant Professor of Dermatology, University of Missouri, Columbia

"Surgical Pearls"
Speaker: David Clark, M.D., Assistant Professor of Dermatology, University of Missouri, Columbia

Moderator: N. Eugene Morrow, M.D., Springfield

5:30 p.m. Board of Directors Meeting

Saturday, April 3

8:30 p.m. "Erythema Multiforme: Pathology, Pathogenesis and Management"
"Practical Pediatric Dermatology"
Speaker: Loren Golitz, M.D., Professor of Dermatology and Pathology, University of Colorado School of Medicine, Denver

"Erythroderma: Pathogenesis, Prognosis and Treatment"
"Research Highlights in Psoriasis: Past, Present, and Future"
Speaker: Alan Menter, M.D., Baylor Medical Center, Dallas, Texas

Moderator: N. Eugene Morrow, M.D., Springfield

7:00 p.m. Dinner

Sunday, April 4

10:00 a.m. Scientific Program

Objectives: Clinical case presentations will be made by members of the Missouri Dermatological Society. Differential diagnosis and treatment options will be discussed.

Moderator: Ron Swinfard, M.D., Columbia

12:00 noon Business Meeting

Sponsored by the Missouri Dermatological Society

House of Delegates Schedule

Thursday, April 1	Opening Session	10:00 a.m.
Friday, April 2	Second Session	4:00 p.m.
Sunday, April 4	Final Session	7:30 a.m.

EMERGENCY PHYSICIANS

Saturday, April 3

Objective: To provide a discussion regarding the required items of transfer agreements.

9:00 a.m. Scientific Program
"Patient Transfer Agreements"

Panelists:

Dean Nierling, M.D., F.A.C.E.P., Medical Director of Emergency Center and Associate Professor of Clinical Surgery, University of Missouri Health Sciences Center, Columbia

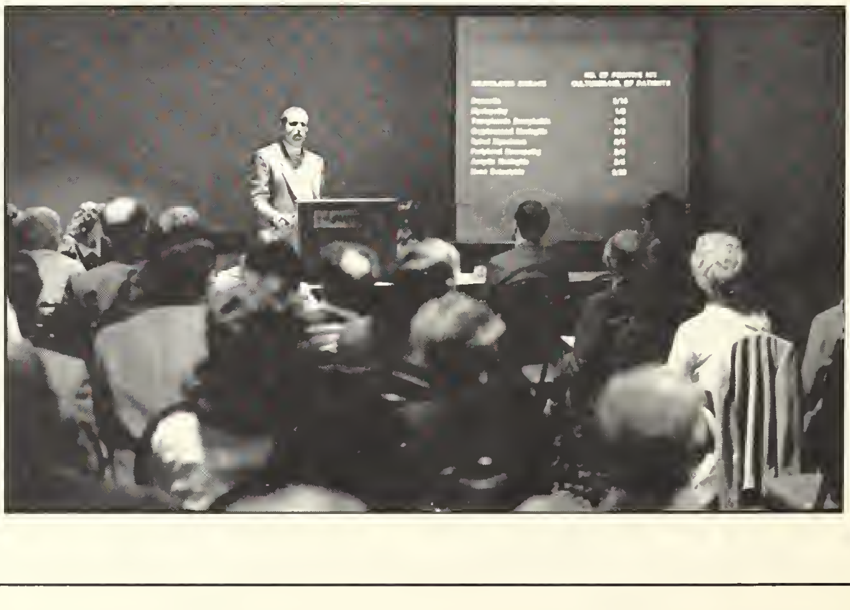
Frank Foster, Health Planning Legal Specialist, Department of Health, Jefferson City

Michael Szewczyk, M.D., F.A.C.E.P., President, MoACEP, Columbia

Moderator: Michael Weaver, M.D., F.A.C.E.P., Kansas City

12:00 noon Board of Directors Luncheon Meeting

Sponsored by the Missouri Chapter
American College of Emergency Physicians



Diversity has always marked the scientific sessions of the Annual Convention. With the many specialties that sponsor programs during the meeting, attendees can choose from a wide variety of topics, speakers, and lecture formats.

FAMILY PHYSICIANS

Saturday, April 3

8:00 a.m. Directors' Breakfast

8:30 a.m. Directors' Meeting

Objectives: To educate participants regarding recent changes and additions to CPT coding; to review mistakes commonly made by physicians with the goal of increasing their understanding of the system; to improve the relationship between physicians and carriers.

11:00-12:30 p.m.
Scientific Program
"CPT Update Documentation & Coding Requirements"
Speaker: Frank Mohs, M.D., Medical Director, General American, St. Louis

Objectives: To educate the participants regarding laser endoscopic surgical techniques; to acquaint them with the indications and rationale for its use; and to provide them with information which will assist them with patient education.

1:30-3:00 p.m. Scientific Program
"Laser Endoscopic Cholecystectomy"
Speaker: Lon McCroskey, M.D., F.A.C.S., Kansas City

Moderator: David Glover, M.D., Warrensburg

Sponsored by the Missouri Academy of Family Physicians

HEART ASSOCIATION

Friday, April 2

Objectives: To increase awareness in the Missouri physician population of the importance of cholesterol in atherosclerosis. To increase awareness in the Missouri physician population of the importance of detecting and treating elevated serum cholesterol. To increase the knowledge of the Missouri physician population on how to detect, treat and counsel patients with elevated serum cholesterol. To increase the awareness in the Missouri physician population of the educational material and support from the American Heart Association.

2:00 p.m. Scientific Program
"Nutrition and Heart Disease"
Speaker: Rita Sissel, R.D., Director of Food and Nutrition Services, Memorial Community Hospital, Jefferson City

Sponsored by the American Heart Association

INTERNAL MEDICINE

Saturday, April 3

Objective: To identify the essential requirements that will enable participants to comply with the CLIA regulations.

1:00 p.m. Scientific Program
"How to Comply with CLIA"
Speaker: Carol Grove, American Society of Internal Medicine, Washington, DC

Sponsored by the Missouri Society of Internal Medicine

NEUROLOGY

Saturday, April 3

Objectives: It will be the objective of this program to compare PET, CAT Scan, and MRI, explaining the differences, the similarities and the strong points and indicators for each.

10:00 a.m. Scientific Program
"Use of PET in Diagnosis"

11:00 a.m. Membership Meeting

12:00 noon Reception

Sponsored by the Missouri State Neurological Association

NEUROSURGERY

Saturday, April 3

Objective: Understand indications for placement of spinal instrumentation in patients with degenerative disease of the lumbar spine. Understand how to select the number of levels that require instrumentation.

12:00-1:00 Luncheon and Scientific Program
"The Role of Instrumentation in Degenerative Disease of the Lumbar Spine"

Sponsored by the Missouri State Neurosurgical Society

OBSTETRICS - GYNECOLOGY

Saturday, April 3

Objective: To enable participants to assess current risk management practices and make decisions about appropriate risk management behavior in a more systematic and meaningful way.

9:00 a.m.	Scientific Program "Risk Management in OB-GYN"
12:00 noon	Luncheon
2:00 p.m.	Scientific Program

Sponsored by the Missouri OB-GYN Society

MSMA members listen to testimony before a reference committee. During reference committee discussions, debate is wide-ranging and open to all members' viewpoints.

OPHTHALMOLOGY

Saturday, April 3

8:00 a.m.	Residents' Papers
12:00 noon	Business Luncheon
1:00 p.m.	Residents' Papers

Sponsored by the Missouri Ophthalmological Society

OTOLARYNGOLOGY

Saturday, April 3

7:00 a.m. Breakfast
Speaker: Jamie Lucas, Director, Office of State and Regional Society Relations, American Academy of Otolaryngology - Head and Neck Surgery, St. Louis

9:00-12:00 noon
Scientific Program
"Endoscopic Sinus Surgery"
Speaker: William Davis, M.D., Professor and Chief of the Division of Otolaryngology, Department of Surgery, University of Missouri Health Sciences Center, Columbia

Sponsored by the Missouri Society of Otolaryngology-
Head and Neck Surgery

General Session Speaker

Edward F.X. Hughes, M.D., M.P.H., Director of the Center for Health Services and Policy Research at Northwestern University.

Dr. Hughes is a noted speaker on health care economics and policy making. His topic during the Friday morning General Session will be *"Perspectives on the Future of American Medicine."* All members are invited to hear his views on this current "hot" topic.

PATHOLOGY

Saturday, April 3

8:30 a.m. Continental Breakfast

Objective: To provide recent advances in serological testing and advances in new antigen/antibody type reactions in the diagnosis of disease.

10:00 a.m. Scientific Program
"Clinical Immunology for the Pathologist with Recent Advances"

12:00 noon Luncheon

1:30 p.m. Board of Directors Meeting

Sponsored by the Missouri Society of Pathologists

PHYSICAL MEDICINE AND REHABILITATION

Saturday, April 3

Objective: The learning objectives for the presentation given by Dr. Boden are: To realize that x-rays, MRIs and CT scans are not foolproof. There are positive findings in healthy subjects. These findings in workers' compensation cases are often the reason for surgery. Evaluations of knee concerning meniscal tears. Appropriate timing for imaging studies. Some basics of the non-operative treatment algorithms. Interesting case presentation appropriate for our group.

9:00-12:00 noon Scientific Program
"Abnormal Magnetic-Resonance Scans of the Lumbar Spine, Cervical Spine and the Knee in Asymptomatic Subjects"
Speaker: Scott D. Boden, M.D., Assistant Professor of Orthopaedics, Emory University School of Medicine, Georgia

12:00 noon Luncheon

Sponsored by the Central Society of Physical Medicine and Rehabilitation

PLASTIC AND RECONSTRUCTIVE SURGERY

Objectives: The objective of the scientific program is to present timely topics of interest to a broad realm of plastic surgeons and also, topics that would also be of advantage to referring physicians or other surgeons that may be involved with the specific problem. With this in mind, the papers are reviewed for timeliness, content and interest.

Friday, April 2

2:00 p.m. Scientific Program
"New Advances in Burn Treatment"
Speaker: Bruce Achauer, M.D., Orange, California

6:30 p.m. Reception and Dinner

Saturday, April 3

7:00 a.m. Breakfast and Business Meeting

9:00 a.m. Scientific Program
"Early Management of Electrical Burns of the Hand"
Speaker: Bruce Achauer, M.D., Orange, California

Sponsored by the Missouri Association of Plastic and Reconstructive Surgeons

PSYCHIATRY

Saturday, April 3

8:00 a.m. Breakfast

Objective: To provide participants with techniques to recognize and treat depression. To provide information on the proper use of benzodiazepines.

9:00-10:30 a.m. Scientific Program
"Diagnosis and Treatment of Depression"
"Use and Misuse of Benzodiazepines"

12:00 noon Luncheon

Sponsored by the Missouri Psychiatric Association

RADIOLOGY

Saturday, April 3

8:30 a.m. Continental Breakfast

9:00 a.m. Nominating Committee Meeting

10:30 a.m. Board of Directors Meeting

11:30 a.m. Board Luncheon

Objective: To provide an update on political and economic issues impacting on the practice of radiology.

1:30 p.m. Scientific Program
"Political Economic Issues"

3:30 p.m. Annual Meeting

5:00 p.m. Reception

Sponsored by the Missouri Radiological Society

MISSOURI CHAPTER, AMERICAN COLLEGE OF SURGEONS

Saturday, April 3

Objectives: To inform physicians of the current multidisciplinary approach to rectal cancer therapy.

9:00-12:00 Scientific Program
"Current Therapy for Rectal Cancer"
Speaker: Marvin Lopez, M.D., F.A.C.S., F.R.C.S. (C.), Chief of General and Oncologic Surgery, St. Elizabeth's Hospital of Boston (Tufts University), Boston, Massachusetts

Moderator: Debra Koivunen, M.D., F.A.C.S.

Sponsored by the Missouri Chapter, American College of Surgeons
Co-sponsored by the Missouri State Surgical Society and the American Cancer Society.

12:30 p.m. Luncheon

Sponsored by the Missouri Chapter, American College of Surgeons
co-sponsored by the American Cancer Society

MISSOURI STATE
MEDICAL ASSOCIATION
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The House of Delegates formulates Association policy during its annual meetings. This year's deadline for submitting resolutions to the annual convention is February 15, 1993.

MISSOURI STATE SURGICAL SOCIETY

Thursday, April 1

6:00 p.m. Board of Directors Dinner

Friday, April 2

Objectives: To inform physicians of the latest developments in surgical laparoscopy and angioscopy, including indications, techniques, and possible complications.

10:45-12:15 Scientific Program
"Laparoscopic Colon Resections"
Speaker: Walter Peters, M.D., F.A.C.S., General Surgeon, Columbia Surgical Associates, Columbia

"Applications of Angioscopy"
Speaker: Richard Pennell, M.D., F.A.C.S., St. Louis

Objectives: To inform physicians about current reimbursement issues, including payment differentials between urban and rural surgeons, and offer practical advice on practice management in light of these changes.

1:30-3:00 p.m. Scientific Program
"Reimbursement Issues in Surgery"
Speakers: James Haug, Director, Socioeconomic Affairs Department of the American College of Surgeons, Chicago, IL and
Glenn McElroy, Jr., Practice Management Consultant, McElroy and Associates, Columbia

Sponsored by the Missouri State Surgical Society

Saturday, April 3

Objectives: To inform physicians of the current multidisciplinary approach to rectal cancer therapy.

9:00-12:00 Scientific Program
"Current Therapy for Rectal Cancer"
Speaker: Marvin Lopez, M.D., F.A.C.S., F.R.C.S. (C.), Chief of General and Oncologic Surgery, St. Elizabeth's Hospital of Boston (Tufts University), Boston, Massachusetts

Sponsored by the Missouri State Surgical Society
Co-sponsored by the American Cancer Society and the Missouri Chapter of American College of Surgeons

THORACIC

Saturday, April 3

8:00 a.m. Annual Charles A. Brasher, M.D., Memorial Lecture

Sponsored by the Missouri Thoracic Society
co-sponsored by the Missouri State Allergy Association

WOMEN PHYSICIANS

Objectives: To enable participants to recognize symptoms of advanced osteoporosis and provide a choice of effective treatments for this painful condition.

Saturday, April 3

10:30-12:00 Scientific Program
"Treatment of Advanced Osteoporosis"

Moderator: Jo-Ellyn M. Ryall, M.D., St. Louis

12:00-2:00 p.m. Lunch

Sponsored by the American Medical Women's Association

Convention attendees take advantage of a break in the meeting schedule to visit the Exhibit Hall. The exhibitors help to support the variety of scientific programs that are offered each year. This year's program features topics from 21 different medical specialties. A list of the 1993 Exhibitors appears on page 20.

Annual Meetings and Events

Thursday, April 1

10:00-12:00 noon	**Opening Session, House of Delegates**
11:30 a.m.	St. Louis Metropolitan Medical Society Luncheon
12:00 noon	Metropolitan Medical Society of Greater Kansas City Luncheon
6:00-7:00 p.m.	**Reception** honoring MSMA President and Auxiliary President

Friday, April 2

7:00 a.m.	Councilor Breakfasts: Districts #1,2,4,5,6,8,10.
8:30-11:30 a.m.	MU Alumni Organization Board of Governors Breakfast Meeting
9:00-11:00 a.m.	**General Session**
11:00-12:30 p.m.	Young Physicians Meeting
11:00-12 noon	Discuss the Issues with your AMA Delegates
12:00 noon	Councilor Luncheons: Districts # 7 & 9 Student Delegates Luncheon
12:30-1:30 p.m.	Physicians Health Committee Luncheon Meeting
12:30-2:30 p.m.	MU Alumni Awards Luncheon
2:00-4:00 p.m.	Hospital Medical Staff Section Meeting
4:00-6:00 p.m.	**House of Delegates -- Second Session**
6:00-7:30 p.m.	Receptions for UMKC, St. Louis University, Washington University and MU Alumni

Saturday, April 3

7:15 a.m.	MSMA Auxiliary Public Affairs Breakfast
1:30 - 2:30 p.m.	MMPAC Meeting

6:00 p.m.	**Presidential Inauguration** *Melvin C. Kasten, M.D., Cape Girardeau*
7:00 p.m.	**MSMA Reception**

Sunday, April 4

7:30-10:00 a.m.	**Final Session, House of Delegates**

MSMA Auxiliary Events

Thursday, April 1

2:00 p.m.	Board Meeting "Preparing for Success" Priscilla Gerber, AMAA President
6:00 p.m.	Reception honoring MSMA President Carol F. Williams, M.D., and Auxiliary President Marge Perkins
7:00 p.m.	"Par-TEE" AMA-ERF Benefit Buffet

Friday, April 2

7:15 a.m.	MSMAA Past President's Breakfast
8:30 a.m.	MSMAA General Assembly
12:30 p.m.	"Go For(e) It" Luncheon
2:00 p.m.	AMA-ERF Boutique
7:00 p.m.	Dutch Treat Dinner

Saturday, April 3

7:15 a.m.	MSMAA Public Affairs Breakfast
9:00 a.m.	MSMAA General Assembly
12 noon	Installation Luncheon
7:00 p.m.	Reception for new MSMA President, Melvin Kasten, M.D., and MSMAA President, Elizabeth Huffaker

Exhibitors

at the 135th Annual Convention

Advanced Medical Data Systems
Kansas City

Air Force Health Professions

American Red Cross - Regional Tissue Service
Springfield

Berlin-Wheeler, Inc.
Jefferson City

Blue Cross/Blue Shield of Kansas City
Kansas City

Blue Cross/Blue Shield of Missouri
St. Louis

Bristol Laboratories
Princeton, NJ

Correctional Medical Systems
St. Louis

CyCare Systems, Inc.
Scottsdale, Ariz.

Disability Determinations
Jefferson City

Division of Medical Services - State of Missouri
Jefferson City

Doctors' Office Systems
Columbia

Encyclopedia Britannica, North America
Chicago, Ill.

Fisons Pharmaceuticals
Columbia

Health Care Interchange, Inc.
St. Louis

HealthSouth Rehabilitation
St. Louis

Mayer Hoffman McCann
Kansas City

Mc Neil Consumer Products Co.
Kansas City

Mead Johnson Pharmaceuticals
Princeton, NJ

The Medical Protective Company
Fort Wayne, Ind.

Medical Data Systems
St. Louis

Medical Defense Associates
Springfield

Medisys, Inc.
West Des Moines, Iowa

Merck Human Health Division
Overland Park, Kan.

Merrill Lynch
Springfield

Metropolitan Reference Labs
St. Louis

Midwest Organ Bank, Inc.
Kansas City

Miles, Inc., Diagnostics Division
St. Louis

Miles, Inc.
St. Louis

Missouri National Guard
Jefferson City

MOMEDICO
St. Louis

Moneta Group
St. Louis

Narco Medical Services
Kansas City

Peace Island Lodge
Canada

Pfizer Labs
Grover

The PIE Mutual Insurance Co.
Cleveland, Ohio

Procter & Gamble Pharmaceuticals
Barnhart

Professional Healthcare Consultants
Jefferson City

ProviderLink
St. Louis

RCA Mutual Insurance Company
Springfield

Rhone-Poulenc Rorer Pharmaceuticals Inc.
Collegeville, Pa.

Roche Biomedical Laboratories
Kansas City

SmithKline Beecham Clinical Labs
St. Louis

SmithKline Beecham Pharmaceuticals
St. Louis

Suit Yourself
Columbia

The Medico Group, Ltd.
St. Louis

U.S. Army Medical Department

UAD Labs
Jackson, Miss.

Xelan
Kansas City

Convention Pre-Registration

There is no registration fee for members attending the Missouri State Medical Association Annual Convention. However, for your convenience in registering at the meeting, as well as to assist us in planning, you may pre-register now for the April convention.

Please complete and return the form below (photocopies are acceptable) to the MSMA Office. We will send you your registration card, which you will be asked to present at the Convention Desk. Your registration packet and nametag will be prepared and awaiting your arrival.

For more information about the 135th Annual Convention, please call the MSMA Office at 314/636-5151.

Convention Pre-Registration

Name (as you wish it to appear on your nametag): ______________________________

Address: ____

____

County Medical Society: ____

Will you be serving as a delegate? ☐ Yes ☐ No

Are you a member of: ☐ AMA ☐ MMPAC

Please complete and return to:
Missouri State Medical Association
113 Madison Street
Jefferson City, MO 65102-1028

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The
135th Annual Convention

# of the
Missouri State
Medical Association

FRANCIS A COUNTWAY
LIBRARY OF MEDICINE
10 SHATTUCK ST,
BOSTON, MA 02115

Tan-Tar-A
Lake of the Ozarks

April 1-4, 1993